

PA 567

Energy Resources: Policy & Administration

Fall 2025 Last Modified 7 December 2025

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Official Course Description

The course reviews the history, politics, and institutions related to current energy policy and administration with particular attention to the Pacific Northwest and development of hydroelectric power. We examine the history of national energy policy, including political, financial, and environmental issues.

We explore the roles of interest groups; state, local, national, and international governments; and regional governing institutions as well as the changing distribution of social costs and benefits as both a cause and result of policy change. The course covers the passage of the 1980 Northwest Power Act, the creation of the Northwest Power Planning Council, and the implementation of the act, as well as current issues including energy conservation, regional power planning, deregulation and the status of institutions involved in energy policy, siting of generation and transmission, new load sources such as data centers, and Columbia basin fish and wildlife conservation.

Background

Energy drove the industrial revolution and is driving the post-industrial revolution as well. Call centers, mobile phones, and quantum computers all share the need for reliable energy supplies. When combined, the transportation, building, and industrial energy industries create, by far, the largest economic sector in the world. Because of its socio-economic importance, as well as its substantial environmental footprint, the energy industry is heavily regulated.



Figure 1: Source www.Hopeforthehills.org

Against this backdrop, the electricity sector is undergoing especially turbulent times as traditional business models are being altered due to renewable energy targets, climate change legislation, and energy efficiency and distributed generation requirements. Utilities are being required to deliver renewable electricity to their customers, but transporting the renewable electricity from rural to urban areas is increasingly difficult

due to citizen and environmental opposition to new power lines. The Northwest electricity sector includes federal hydropower suppliers with large impacts on regional market development. Rapid decarbonization policies are beginning to drive fuel switching from direct use of natural gas in homes and businesses and, as a result, natural gas suppliers' historical business models are likely to change.

PA 567 provides social science theories and analytical tools to help graduate students and energy sector professional navigate the complexities of the energy sector. The course is broken down into two primary modules. Module one prepares students to perform analyses of energy sector projects as well as the regulatory system overlaying the energy sector. The learning objective for module one also includes energy analysis in MS Excel to help students be competitive for energy sector employment and academic research. Module two applies the skills learned in the first module to a range of energy policy topics relevant to the Western US. The policy and history of energy policy in the Western US is included throughout the course. Where applicable, the course will use case studies from the energy sector to enrich our class conversations.

This semester the class will be taught by Adjunct Professor Bill Edmonds, who has decades of experience in the energy sector in both the public and private sectors. Most recently, he was the Executive Director of the NW Power and Conservation Council. He will bring case studies from his experience to engage the class in real life policy issues. As is the case each year, the course includes a stellar list of guest presenters to offer the perspective of leaders in the energy policy arena.

This course is recommended as a pre-requisite for PA 573 Smart Grid and Sustainable Communities.

Course Information

Time: **Tuesdays 5:30 – 8:00 PM**
Room: **URBN 204 & Zoom**
CRN: **12486**

Instructor Bill Edmonds
wedmonds@pdx.edu

Urban Center Building (URBN)

Room 204

TUESDAY 5:30-8:00

ROOM CODE 685271

Hybrid Course Zoom Meeting Information

<https://pdx.zoom.us/j/7023215134>

Professional Development Coordinator

Brandon Kurtz cps_energy@pdx.edu

Virtual Office Hours: By appointment

The best way to get in touch with me is via email here: wedmonds@pdx.edu

I will make every effort to respond to email messages within 1 business day. **Please include PA 567 in the subject line. Please do NOT use the Canvas email.**

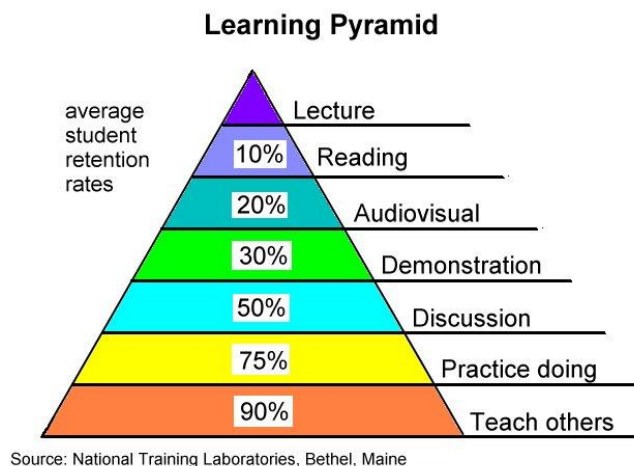
We will arrange zoom meetings for office hours. Of course, I'm anxious to work through the material we're covering in class. I'm also happy to connect more broadly on general energy topics of interests as well as questions concerning job searching and career development.

Course Prerequisites

Graduate-level policy process, policy analysis, microeconomics, and statistics courses are suggested.

The Learning Pyramid: The pyramid is a (rough) heuristic representing average retention rates for material taught using various methods (estimated percentages and ordering of teaching strategies may vary for individuals and the subject matter). While it over simplifies a complex system, it is useful for driving a more varied approach to classroom learning that best meets the needs of a variety of learning styles.¹

Because lectures are the worst means of learning material and retaining it, I use a mixed bag of pedagogical techniques in the class in order to increase learning rates in a seminar style. Learning by "practice doing" in the form of homework is one pedagogical strategy. Social science theories are incorporated into current energy policy problems to help integrate theory and practice. We also flip the classroom and students are given an opportunity to present their research as well as one of the course readings over the term.



¹ <http://www.washingtonpost.com/blogs/answer-sheet/wp/2013/03/06/why-the-learning-pyramid-is-wrong/>

Course Competencies

PSU's Department of Public Administration has developed a list of "key competencies" that students are expected to develop through their various course and experiences at PSU. The following key competencies are supported by this course.

1. Conceptualize, analyze, and develop creative and collaborative solutions to challenge in public policy, leadership and management.
2. Assess challenges and explore solutions to advance cross-sectoral and inter-jurisdictional cooperation in public programs and services.
3. Demonstrate verbal and written communication skills as a professional and through interpersonal interactions in groups and in society.
4. Think critically and self-reflectively about emerging issues concerning public service management and policy.

By the end of this course:

1. Students will develop a knowledge of energy supply and demand basics.
2. Students will understand the socio-political context of energy policy in the Western US.
3. Students will understand how the institutional history of the NW power system impacts current policy proposals and outcomes.
4. Students will understand linkages between energy production and consumption and its environment impacts.
5. Students will be able to perform basic energy analysis using MS Excel
6. Students will understand the changes to the electricity sector from climate change legislation, distributed renewable energy, as well as conservation policies.
7. Students will be able to write a clear and concise policy paper.
8. Students will be able to present research results effectively in a professional setting.

Connecting our Learning to the Present

The energy sector is changing fast and we'll be more effective in our work and study if we're actively connecting our academic theory to today's policy issues.

For this reason, we will be drawing heavily on the current events in the energy sector alongside our theoretical work. Some of the readings will be pulled from the sources below, but even when they're not listed in the readings, my expectation is that all students will be combing these sources and other news outlets for events that are related to our studies.

1. **Clearing Up** – Clearing Up is a critical source for current regional energy information. It is published weekly online. Individuals with a PSU email may sign up for free using the following steps.

(After the first class, I will be sending in the emails for each student with a PSU email. These students will then get the pdf version of Clearing Up to your email. To be able to use the online portal to read online and to reach back to other editions, use the following steps to become an online user. Many of the Pro-Dev students work for institutions that receive Clearing Up already. There may be some students without a PSU email or without access to the publication. We'll include some stories on canvas to assist these students access key stories.)

- 1) Go to: <https://www.newsdata.com/register>
 - 2) Fill in your information
 - 3) Use your PSU email address to link your account
 - 4) Confirm your email
 - 5) Add newsdata@newsdata.com to your safe sender list
2. **Utility Dive:** Subscribe to Daily Dive that covers clean energy, regulation, storage and other issues from a national perspective. Sign up here: <https://www.utilitydive.com/signup/>
 3. **NW Power and Conservation Council Spotlight** – The Council is in the middle of important work to plan the region's future power mix. Students can stay current with a glance at the Spotlight, the Council's monthly newsletter. Sign up for free here: <https://lnkd.in/eJDWhSsa>
 4. **Canary Media** – A national, clean energy/climate policy update. It arrives free in your inbox each morning. Sign up here: <https://www.canarymedia.com/articles/newsletter-sign-up>

Evaluation: For-Credit Students (these are not required of Pro Dev students)

1. Overall grading for the course is as follows:
Grading for grad students

15% - Discussion leader
20% - Before Class Preparation (Craft one question each week; respond to a question)
20% - Research paper
15% - PowerPoint and presentation of research to class
15% - Homework assignment
15% - In class participation



Each of these items is outlined in more detail below.

2. **Discussion Leader:** Each student is required to be the discussion leader (student chat) for one of the topics that have been assigned over the term (15%).

To help focus the class on connecting the theory we're learning to current events, each Grad Student is to bring a news article or other source regarding current energy policy and current events in the field. News articles by themselves are not adequate for discussion leaders, but rather you must link the news articles to the theory and lessons within the readings.

- a. Students need to go beyond explaining the current event to tie it to our readings.

The google sheet sign up for discussion leaders is: [here](#)

Make sure that your weekly topic is what you think it is in case the schedule has changed.

- b. Presentation should be a 5-8-minute presentation using PowerPoint or handouts followed by Q&A.
 - c. You **MUST** use the structure of the Discussion Leader Guidance PPT on Canvas >Modules> Course Assignments to structure your presentation.
 - d. **Post your PPT to Canvas prior to class: Discussions>PPTs file repository and discussion.**
3. **Before Class Preparation:** Course discussion board grading consists of two Before Class Preparation (BCP) elements (20%). They are due at 5:30 PM on Tuesday each week based on the current week's readings.
 - a. AFTER completing the week's readings, carefully craft one question related to the coming class that you develop based on your experience and the reading material. Questions and comments are still required when we are not having an outside speaker. The question can be a clarification of the material, an extension of the speaker's material, a linkage between the speaker's material and other course reading. It can also identify logical inconsistencies in the material, question the "conventional wisdom" or ask questions about evaluative criteria that the speaker did not cover (i.e., equity, externalities, effectiveness, efficiency, or empowerment). These questions will be shared on the discussion board as possible for the speaker Q&A.
 - b. Respond to one of your classmate's questions with a follow-on, extension, or clarification. You will not be able to "see" other student's Q's until you have posted your own question.
 4. You are required to compose a group research paper that integrates the course learning objectives into an arena of your choosing (20%).



- a. There will be a paper proposal due in November that will outline the research design and methods assignment.
 - i. Each member of the group will be graded on the quality of their own unique contribution to the paper. Each group member's effort on the paper will be graded by their peers.
 - ii. You are expected to be able to write at the graduate level, including concise summaries of policy concepts and results. I may refer you to the writing center: <http://www.pdx.edu/writing-center/>
 - iii. Put your ideas for possible paper topics into the google sheet [here](#):
 - iv. More information on the research paper and proposal will be given out at a later date.
5. PPT and Presentation of the research paper: Students are expected to give a short presentation of their research topic the last week of class. This “mini-conference presentation” is a key learning outcome. (15%)
6. Homework assignment (15 %)
 - a. The homework is an energy analysis assignment and will cover material from the text, lectures, as well as the other readings.
 - b. There will be a required “lab” to go over the HW. We will try to find a time that works for all graduate students but will also record it for later viewing by those who can't attend.
7. Finally, in-class participation is critical to the course learning environment (15%). Student evaluation of their participation is based on Instructor evaluation. Participation will be evaluated over the entire term.
 - a. As part of your participation grade, you also need to upload your current bio [here](#):

Evaluation: Professional Development Participants

Professional development participants MUST complete the assignment to prepare a one paragraph bio on their history, interests, and future plans/desires.

- Participants are strongly encouraged to join one of the research paper groups and offer their sage counsel to their peers.
- Participants are also encouraged to bring in relevant news articles / reports to share with the class.
- The Google Doc to add your bio to is [here](#):

NOTE: If you take the class through the professional development option, you will not be able to retroactively have it count towards the Graduate Certificate in Energy Policy and Management. If you think you may want to pursue the certificate, I suggest that you enroll for the class as for-credit.

Required Course Readings

All graduate students are **required** to buy the following book:

- Randolph, J., & Masters, G. M. (2018). *Energy for sustainability: technology, planning, policy*. 2nd Ed. Island Press. ISBN 9781610918206 (R&M) 1st edition is OK too, but you need to make sure the chapters #'s match up with the syllabus.
- Also, Blume, S. W. (2016). *Electric power system basics for the nonelectrical professional*. John Wiley & Sons. This book is available from the PSU Library.

Professional development students without an energy background will also find these books useful. *The Randolph & Masters text is expensive and is NOT a required purchase for professional development students.*

- The R&M book is in the PSU bookstore. If you buy it online, be sure to get expedited shipping as we will be using it immediately. I have an extra copy to loan out to one person over the term. First-come, first-served.

Handouts from other book chapters will be given for the reading assignments.

Additional readings are in the Files folder.

In addition to the course text, **other required** journal articles and book chapters will be posted on Canvas.

- If something is missing, please email me immediately.
- Optimal readings are always coming across my desk. The syllabus may contain TBA (to be announced) when I have yet to find an optimal reading to exhibit the learning goals of the week. Thus, the syllabus should be considered a living document that will change over the course of the term. *The most current version can always be found on Canvas and you should consult it before doing the readings each week.*

Recommended Readings

I reserve the right to distribute additional readings as the term progresses. I will usually bring some elements of the recommended readings into the class discussions, so some familiarity with them (i.e. quick scan) on your part will be beneficial to your learning environment.

List of Acronyms

Note that there is a list of common acronyms used in the energy world here:

<https://www.dropbox.com/scl/fi/p6728w1q3ostbpnkhn3iq/Energy-Acronyms.docx?rlkey=3qvuycssu5buwfn9ka0i46lkp&dl=0>

Important Dates for Graduate Students

- Important dates for dropping or changing grading options can be found [here](#)
 - Last day to change to Pass/Fail grade option: 16 Nov
- Homework: Homework will be due electronically on Canvas at 5:30 on the day of class

- HW #1 due: **4 Nov at 5:30 (Canvas)**
- Final Group paper due: **12 Dec (Friday) at 5:30 pm**
 - Paper Proposal Due: **14 Nov at 5:30 (Canvas)**
 - Student research presentation PPT due: **5 Dec (Friday)** at 5:30 pm (email)
 - Student research presentations: **9 Dec** at 5:30 pm in-class
- All work products for the class due no later than **12 Dec at 5:30 pm** (email)

Schedule (Click on the hyperlink to see each module's readings)

Subject to change based on speaker availability

Week	Date	Placeholder Topic	Speaker	Deliverable
1	Sept 30	Introduction of class members and syllabus	Bill Edmonds PSU	
2	Oct 7	The History of & Institutional Context for NW Energy Policy	Jeff Hammarlund PSU	
3	Oct 14	The Electricity and Natural Gas Sectors- Overview	Bill Edmonds PSU	
4	Oct 21 <i>Additional Lab Scheduled</i>	Planning for the Future	Tomás Morrissey NW Power and Conservation Council (Confirmed)	
5	Oct 28	Utility Rates, Energy Justice	Bob Jenks Citizens Utility Board (confirmed) Silvia Tanner, Multnomah County Office of Sustainability (confirmed)	
6	Nov 4	Energy Efficiency	Becca Yates Northwest Energy Efficiency Alliance (NEEA) (confirmed)	HW #1 Due

7	Nov 11 (Veteran's Day no class)			13 Nov Paper Proposal Due
8	Nov 18	Hydro, Salmon and Tribal Issues	Jaime Pinkham Columbia River Intertribal Fish Commission (CRITFC) (confirmed)	
9	Nov 25	Renewable Generation and Siting Issues	Nicole Hughes, Renewable NW (confirmed)	
10	Dec 2	New Load: focusing on data centers	Joni Sliger, Oregon Dept of Energy (confirmed)	Draft PPT due 5th Dec (Friday) at 5:30 pm
11	Dec 9	Where the Rubber Meets the Road & Student Paper Presentations	Dan James-BPA	Presentations In class (Paper due: Friday 12 Dec at 5:30 pm)

Course Reading Assignments:

Week 1: Introduction of class members and syllabus [\(Back to Top\)](#)
Course Overview

The Importance of Energy

For the first time since president Nixon declared energy “independence” as a policy priority, the gap between US energy production and energy consumption has begun to narrow, due in large part to shale oil and gas production in the U.S.—but also to improving energy efficiency and policy-driven incentives that are driving new renewable generation, such as wind and solar, into the mix.

The Importance of Hydropower in the Northwest

The Northwest enjoys abundant hydro resources, that have (somewhat) stable production costs, but these resources are integrated into a power market that includes the entire Western US, including California. Climate change and increasing amounts of wind and solar electricity are also changing the value of hydropower.



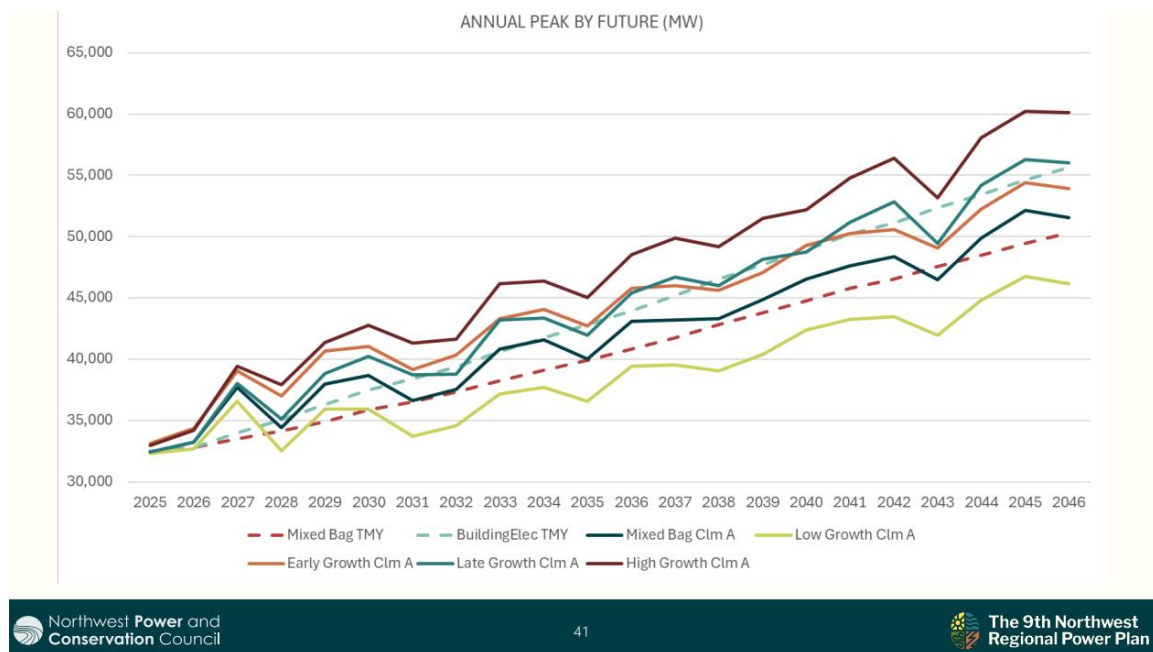
What's happening now

There is too much going on in the energy sector to follow it all, but there are two documents that are current and will help us all step into the complexity with a similar baseline understanding of where we are.

The Oregon Department of Energy just issued the [Oregon Energy Strategy](#) in draft form (August, 2025). It will receive public comments and be finalized in November, 2025. It's a current document that relies on input from a broad and knowledgeable Advisory Group as well as detailed modeling of possible futures. (Jeff Hammarlund, who taught this class for many years and will be sitting in on the class, is on the Advisory Group.)

We will draw on findings from this draft periodically during our course and the first 17 pages provide a useful introduction to the critical issues in the energy sector.

Another process underway that is driving energy policy is the development of the next regional power plan underway at the NW Power and Conservation Council. We will hear from a lead planner in this process during our fourth class. We'll be talking a lot about the growing demand for energy and the way our peak energy needs are dramatically growing. The Council produced a projection of growing annual peak demand that looks like this:



While the scenarios differ, the graph shows peaks may nearly double by the end of the time period (2046). This graph and much more on the demand forecast were presenting to the Council in April, 2025 – the presentation is worth a skim and can be found [here](#).

DISCUSSION QUESTIONS:

- 1) The Oregon Dept of Energy strategy includes these 5 components: energy efficiency, electrification, clean electricity, low-carbon fuels, and resilience. From the strategy document and your understanding of the issues, what are some key components of each strategy and where do each of these strategies face their biggest challenge?
- 2) What's making our peak energy needs grow so dramatically and what are our promising opportunities to reduce this peak growth over time?

Required Reading:

- Oregon Department of Energy, [Oregon Energy Strategy](#), August, 2025, draft (read the first section, p. 1-17, more if you're interested)
- [Presentation to the NW Power Planning Council](#), 9th Power Plan Demand Forecast, presented by Steven Simmons, Tomás Morrissey, Jake Kennedy, April 29, 2025.

Week 2: Institutional Context for Northwest Energy Policy

Guest Lecturer: Jeff Hammarlund

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Required Reading:

- Hammarlund, J. (2002) "Oregon's Role as an Energy Innovator: A Historical Perspective". Oregon's Future Journal. Spring. (Available on Canvas. Note: Jeff will discuss much of this material in class and will assume you will have read it)
- Brunner, J, (2011) "The High-Stakes Math Behind the West's Greatest River". Updated online version of article that appeared originally in Forbes Magazine, November. (Canvas)
- Barringer, F. (2018) [Changing Currents: Picturing a Northwest Without Cheap Public Hydropower](#). Stanford University, The Bill Lane Center for the American West, January 29. (Note: this "counterfactual" offered by the former senior environmental reporter at the New York Times was widely read and quite influential at the time)
- Northwest Power and Conservation Council, [2024 Annual Report to Congress](#). (This provides a useful short introduction. Please focus especially on pages 4-8 and 10-11)
- Northwest Power and Conservation Council, [Ninth Power Plan Reaches Key Milestone, and Council Reviews Preliminary Energy Efficiency, Demand Response Potential](#), June 27, 2025 (Note: this provides the latest update)
- Bonneville Power Administration (2024) [BPA Facts](#), [BPA Service Area](#), [BPA Transmission Facilities](#), [Major Dams of the Columbia River Basin](#), [Public, Tribal,](#)



Portland State
UNIVERSITY

[and Private Utility Customer Utility Service Territories](#) (Note: these short fact sheets and maps will serve as useful references throughout the course)

- Bonneville Power Administration (2021) [Fact Sheet-Preparing for a Resilient Columbia River Hydropower System](#)
- Northwest Power and Conservation Council (2023) [Pocket Guide: Fast Facts about the Columbia River Basin](#) (Note: this short fact sheet will complement the BPA Facts linked above; it offers a regional focus)
- Weise, K. (New York Times), "[A Crucial Treaty Is Tangled In Trump's Feud with Canada](#)", May 15, 2025
- Geranios, N. (Cascade PBS), "[Canada, U.S. Columbia River Treaty Negotiations in Jeopardy](#)", March 31, 2025

Additional Recommended Reading:

- Northwest Power and Conservation Council, [Preparing for the Council's Ninth Power Plan. March 2024](#), read especially pages 1-6
- Northwest Power and Conservation Council, [Pacific Northwest Power Supply Adequacy](#) (article, encouraged to read forward and executive summary)
- U.S. Army Corps of Engineers, Bonneville Power Administration and Bureau of Reclamation (2003), [The Federal Columbia River Power System](#). (Note: this will be particularly helpful to those of you who are not from the Northwest and are least familiar with the multiple uses of the Columbia River)
- Sowards, A. (2019). [Renegotiating the Columbia River Treaty, Six Decades Later](#)
- BPA and US Army Corps of Engineers (2013), [US Entity Regional Recommendation for the Future of the Columbia River Treaty After 2024](#) and [Cover Letter](#), December 13 (Note: this describes the near consensus position parties in the Northwest came up with and recommended to the US State Department as the starting point for negotiations with its Canadian counterparts. It was the starting point for the Biden administration's position. It is unclear if it will be considered relevant by the Trump administration)
- Columbia Basin Bulletin (July 2024) U.S., Canada Reach Agreement in Principle for Modernizing Columbia River Treaty, (Canvas) Note: The "Agreement in Principle" that was reached by the U.S. and Canadian parties just months before the 2024 national election has been removed from the U.S. State Department website. This is a decent summary. It is unclear if this product that took many years to negotiate is still relevant.
- Hammarlund, J. (2002). Electricity, Institutions and Innovation: Oregon's Role in the Development of National Electricity Policy (Canvas) (Note: this is a more detailed version of "Oregon's Role as an Energy Innovator: A Historical Perspective". It is only listed here for those who want to delve further on this history. It was originally available on the website of Oregon's Future Journal and included sources and footnotes. Unfortunately, the journal has ceased

publication and the website, hosted by Willamette University, is not always available)

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 3: The Electricity and Natural Gas Sectors-Overview (Edmonds) ([Back to Top](#))

Public Policy Theory

- Peters, B. Guy (2019). *American public policy: Promise and performance, 11th Edition*. Los Angeles, CA: Sage. (10th edition is OK too) Ch 3: Explaining Policy Choices. On Canvas.
- Sabatier, P. Weible, C. et al. (2018). The Advocacy Coalition Framework. In Sabatier, P. Weible, C. *Theories of the Policy Process*. On Canvas.

Industry Background

- Randolph, J., & Masters, G. M. (2018). *Energy for sustainability: technology, planning, policy*. Island Press. Chapter 9.
- PGE. (2021). Understanding My Bill: Guide to charges and other important information. <https://portlandgeneral.com/help/help-topics/understanding-my-bill>
- Nersesian, R.L. (2007). *Energy for the 21st Century: A Comprehensive Guide to Conventional and Alternative Sources*. NY: ME Sharpe. Ch 2 and 7—Electricity and natural gas. On Canvas. (scan areas of interest)
- Seattle Times Editorial Board, “Natural gas still crucial to the WA grid; utilities need to coordinate, October 8, 2025 (on canvas).

Optional Studies (based on interest)

- Clean Energy Transition Institute, [Key Findings: Energy Pathways](#), June, 2023.
- Brown, Jeffrey, Center for Climate and Energy Solutions, [The Role of Natural Gas in Decarbonizing the US Energy and Industrial Economy](#), July 2021. (p. 1 – 7)

Case Studies: Transmission siting, Solar on farmland

- Wozniakcks, Gosia, *The Oregonian*, [How Oregon plans to handle ‘staggering’ demand for new transmission lines](#)
- [PGE Harborton Project website](#) (watch video and review site)
- Griggs, Taylor, *Portland Mercury*, [A Dangerous Precedent: PGE Faces Major Backlash for Forest Park Utility Proposal](#)
- Wozniakcks, Gosia, *The Oregonian* [Solar boom in Oregon could reshape rural landscapes, agriculture](#)



Current Events

- St John, Jeff, Canary Media, [Can utilities replace power lines with solar and batteries in remote areas?](#) 9 September 2025
- St John, Jeff, Canary Media, [Can virtual power plants relieve hot spots on neighborhood power grids?](#) 19 September 2025
- Feinstein, Laura, Sightline Institute, [Washingtonians Will Soon Enjoy Clearer Heating and Cooling Options](#), March 21, 2024.

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 4: Planning for the Future [\(Back to Top\)](#)

Guest Speaker: Tomás Morrissey NW Council (confirmed)

Readings

- 2021 Power Plan summary: https://www.nwcouncil.org/media/filer_public/45/b0/45b02281-e3da-4788-ad74-355e5c755a75/2022-2.pdf
- 2021 Power Plan Mid-Term Assessment: <https://www.nwcouncil.org/2021-northwest-power-plan/mid-term-assessment/>
- 2025 Avista Integrated Resource Plan (IRP) executive summary, page 4 to 10 (on Canvas)
- 2025 Avista Request for Proposal (RFP), attached, page 1 to 5 (just to the start, pages 1-5) (on Canvas)

(in preparation for our discussion leader presentation)

- Harvard Law School, Environmental and Energy Law Program, “[Regional Transmission Planning Rule](#)”, April 11, 2025.

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 5: Utility Rates and Energy Justice

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Guest Speaker: Bob Jenks Oregon Citizen’s Utility Board and Silvia Tanner, Multnomah Office of Sustainability (confirmed)

Readings



Rates

- Goia Wazniacka, The Oregonian, Why are Oregon electric, gas rates going up so fast, March 11, 2024 (podcast 48 min/transcript available).
<https://www.oregonlive.com/environment/2024/03/why-are-oregon-electric-gas-rates-going-up-so-fast-beat-check-podcast.html>
- Inside Climate News, Rising Electric Rates Tied to Distribution Spending, Disasters and some Clean Energy Programs, Study Says, October 18, 2025.
https://insideclimatenews.org/news/18102025/rising-electric-rates-tied-to-distribution-disasters-clean-energy-programs/?utm_campaign=Newsletter&utm_medium=email&hsenc=p2ANqtz-96IIPGodTEH081kKsXtBYgCw4gVLtpHYOp3Df6lkSEMYRBg4W3W0cT7VZ4T1dqTP4bOifTW4EbC00aSrjtYeP2SM1tXA&hsmi=385966101&utm_content=385966101&utm_source=hs_email
- US AID. (2021). Primer on Rate Design for Cost-Reflective Tariffs. January.
<https://pubs.naruc.org/pub.cfm?id=7BFEF211-155D-0A36-31AA-F629ECB940DC>
- Hausker, C. (2021). Power Market Design for an Era of Rapid Decarbonization. *NRR/ Insights*. Oct. <https://pubs.naruc.org/pub/96C4BEAF-1866-DAAC-99FB-D4C1060DDF7D>
- Nelson, H. (2020). *What if We Build it and Nobody Comes?* Transactive Energy Systems (TES) Conference. 8 December. 10 minute [Video link](#)

Energy Justice

- Multnomah County, Climate Justice Plan, Community Discussion Draft. Pages 1-8, 37-45 (other as interested).
https://multco.us/file/2025_climate_justice_plan_draft.pdf/download
- Carley, S. Energy Policy, An analysis of energy justice programs across the United States. (On Canvas).

Performance Based Ratemaking

- **NEW in preparation for discussion leader.** National Conference of State Legislatures, Performance-Based Regulation: Harmonizing Electric Utility Priorities and State Policy, April 2023 (read overview, remainder based on interest). <https://www.ncsl.org/energy/performance-based-regulation-harmonizing-electric-utility-priorities-and-state-policy>

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 6: Energy Efficiency [\(Back to Top\)](#)

Guest Speaker: Becca Yates, NEEA (confirmed)

Readings –

- Randolph, J., & Masters, G. M. (2018). *Energy for sustainability: technology, planning, policy*. Island Press.
 - Chapter 8.1-8.5, Building Technologies
 - Chapter 16.1-16.3, Market Failures and Solutions
 - Chapter 18.1, State Energy Policy
- Northwest Energy Efficiency Alliance (NEEA), explore website on NEEA's Market Transformation Portfolio, <https://neea.org/market-transformation-portfolio/> and NEEA's 2025-2029 Strategic and Business Plan (p. 5 – 15) <https://neea.org/wp-content/uploads/2025/03/NEEA-2025-2029-Strategic-and-Business-Plans.pdf>
- Energy Trust, review website, read "Our History" and other areas of interest, <https://www.energytrust.org/about/who-we-are/history/>
- Cohn, C., and N. W. Efram. 2022. *Building Electrification: Programs and Best Practices*. Washington, DC: American Council for an Energy-Efficient Economy. aceee.org/research-report/b2201. EXECUTIVE SUMMARY

Short Videos to Prepare for Discussion with Becca Yates (2-3 min each)

ABOUT NEEA:

About NEEA from former NEEA Board Chair and Energy Trust Executive Director Michael Colgrove: [25 Years of Market Transformation: Transforming the Future on Vimeo](#)

About the practice of Market Transformation that NEEA uses: [Creating Efficient Choices: The Art of Market Transformation on Vimeo](#)

About NEEA's work: Market Transformation in Action. National Scale, Regional Value <https://vimeo.com/1027871769>

Collecting data to inform energy-efficient opportunities across the four state region: [NEEA 2022 Residential Building Stock Assessment on Vimeo](#)

EXAMPLES OF ENERGY-EFFICIENT PRODUCTS, PROGRAMS + REGIONAL COLLABORATIONS

Example of energy-efficient technologies – Advanced building practices and HVAC.
Example of market partner (builder), utility (Seattle City Light) and NEEA: [BetterBuiltNW Pilot Video on Vimeo](#)

Examples of energy-efficient technologies – triple pane window and advanced building practices highlighting the Confederated Tribes of Grand Ronde partnership with Energy Trust, supported by NEEA: [BetterBuiltNW: Tribes' Net Zero Homes Built to Maximize Efficiency and Optimize Comfort - YouTube](#)

Opportunities for EE to enable renewables, support capacity constraints and how emerging technologies are addressing these opportunities with technology developments: [Heat Pump Water Heaters on Vimeo](#)

Example of gas heat pump technology and large-scale partnerships across the market [Gas Heat Pumps on Vimeo](#)

Examples of energy-efficient technologies - LLLC: [The Benefits of Luminaire Level Lighting Controls - Integrated Occupancy Sensors on Vimeo](#)

Case study on deploying LLLC programs: [LLL Case Study on Vimeo](#)

Example of energy-efficient technology driving workforce, partnerships between utilities (Flathead Electric) and local businesses (HVAC contractor) that drive economic solutions: [I Want My DHP! on Vimeo](#)

Discussion leader articles

- Utility Dive, California injects \$40M into heat pump water heater effort amid broader push to decarbonize buildings, April 11, 2022.
<https://www.utilitydive.com/news/california-injects-40m-into-heat-pump-water-heater-effort-amid-broader-pus/621869/>
- Pacific Northwest National Labs, Clean Energy and Transactive Campus Project (on canvas)
- Pacific Northwest National Labs, Intelligent Load Control (on canvas)

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 7: No Class

Week 8: Hydro, Salmon and Tribal Issues

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Guest Speaker: Jaime Pinkham, CRITFC (confirmed)

Readings –

- CRITFC. (2022). Energy Vision for the Columbia River Basin. Full Report. <https://critfc.org/wp-content/uploads/2024/06/EnergyVision-full-report.pdf> (Read Executive Summary and other sections based on interest)
- CRITFC Website: [Home - CRITFC](#) (explore the CRITFC website to understand the structure and operation of the organization.)
- NW Newsletter, Energy Leaders Asked to Manage for an Abundance of Salmon, September 10, 2025, https://www.newsdata.com/nw_fishletter/energy-leaders-asked-to-manage-for-an-abundance-of-salmon/article_e9f97719-7d37-4f73-9b90-f5d380f40e07.html
- Oregon Capital Chronicle, “Renewed legal battle ramps up over Columbia Basin dams and Salmon, October 17, 2025. <https://oregoncapitalchronicle.com/2025/10/17/renewed-legal-battle-ramps-up-over-columbia-basin-dams-and-salmon/>

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 9: Renewables generation development and siting issues

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Guest Speakers: Nicole Hughes, Renewable NW (invited)

Reading:

- Randolph, J., & Masters, G. M. (2018). *Energy for sustainability: technology, planning, policy*. Island Press. Chapter 10 **OR** 11 (based on your interests), Chapter 12.
- Renewable NW, “Addition Over Subtraction”, October 2, 2025. <https://renewablenw.org/addition-over-subtraction>

- Lazard, Levelized Cost of Energy, June 2025.
<https://www.lazard.com/media/5tlbhyla/lazards-lcoeplus-june-2025-vf.pdf>
- Authors: Ramsey Fahs, Alan Propp, Louise White, “Implementing Federal Clean Energy Programs: Lessons Learned from DOE and Partner Agencies” October 2025 (read Executive Summary and Introduction (p 1-10), review Lessons Learned p. 11-19) <https://energyimplementation.github.io/implementation-report.pdf>
- PV Magazine, US Clean energy loses \$24 billion, 21,00 jobs through September, October 23, 2025 <https://www.pv-magazine.com/2025/10/23/us-clean-energy-loses-24-billion-21000-jobs-through-september/>
- PV Magazine, New Risks for US Solar, September 16, 2025 <https://pv-magazine-usa.com/2025/09/16/new-risks-for-u-s-solar/>
- DSIRE Website, NC Clean Energy Technology Center (put your zip code in the red bar at the top to get your local policies that support renewables)
<https://www.dsireusa.org/>
- Nelson, H., Hass, S., Sarle, K., Renier, A. (2021). [Communities of Place vs Communities of Interest](#): Citizen Information and Locally Unwanted Land Uses. *Environmental Impact Assessment Review*
- NW Energy Coalition. (2024). NWECA Briefing on Transmission 2024. 1hr-30 min.
<https://www.youtube.com/watch?v=b1AQfMt3hrl>

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 10: New Load: with a focus on data centers[\(Back to Top\)](#)

Guest Speaker: Joni Sliger, Oregon Dept of Energy (confirmed)

Required Reading

- **Skim for general background:** U.S. Congressional Research Service, *Data Centers and Their Energy Consumption: Frequently Asked Questions*, August 26, 2025, https://www.congress.gov/crs_external_products/R/PDF/R48646/R48646.1.pdf (14 pages)
- **Class discussion:** Should Oregon State Legislature adopt the Oregon Energy Strategy’s recommended Cross-Cutting Action #1 to “Impose registration and reporting requirements upon all new large electric loads to inform greenhouse gas emissions analyses, and evaluate whether policy changes are needed to bring emissions in line with state policies”?
 - Everyone read:
 - ODOE, Oregon Energy Strategy, pages 27 (Figure 3 and associated text) and 83-84 (Cross-Cutting Action 1), <https://www.oregon.gov/energy/Data-and-Reports/Documents/Oregon-Energy-Strategy.pdf> (~3 pages)

- BPA, Fact Sheet: New Large Single Load, October 2020, <https://www.bpa.gov/-/media/Aep/power/provider-of-choice/fs-202011-new-large-single-load.pdf>
- “Yea” Group also read (Yea in classroom):
 - PAE, The Energy & Water Use Impacts of Building System Design for Data Centers: Design Considerations for Oregon & Washington, <https://critfc.org/wp-content/uploads/2025/03/data-center-report.pdf> (~17 pages) (study commissioned by the Confederated Tribes of the Umatilla Indian Reservation and the Columbia River Inter-Tribal Fish Commission)
- “Nay” Group also read (Nay group on zoom):
 - Oregon Business & Industry, Keynote speech: Restoring Oregon’s Competitiveness: A Necessary Imperative for Healthy Infrastructure, https://theoregonsummit.com/wp-content/uploads/Wilhelms_NEBC-09.09.25.pdf (22 slides) (recommend watching 34 minute recording: <https://www.youtube.com/watch?v=DwcCzXu40aA>)
 - Eastern Oregon leaders praise data centers, look to future, May 30, 2025, <https://eastoregonian.com/2025/05/30/local-leaders-praise-data-centers-look-to-future/> (~2 pages)
 - Association of Oregon Counties, *Amazon Renewable Energy Commitments Will Bring Clean Power to Eastern Oregon*, February 22, 2024, [Amazon Renewable Energy Commitments Will Bring Clean Power to Eastern Oregon | Association of Oregon Counties](https://www.aocoregion.com/news/2024/02/22/amazon-renewable-energy-commitments-will-bring-clean-power-to-eastern-oregon/)

Suggested Reading

- The Economist, “The murky economics of the data centre investment boom, September 30, 2025 (on Canvas)
- Data Center Frontier, “Texas Senate Bill 6: A Bellwether On How States May Approach Data Energy Use, July 2, 2025, <https://www.datacenterfrontier.com/energy/article/55298872/texas-senate-bill-6-a-bellwether-on-how-states-may-approach-data-center-energy-use>
- Canary Media, Google’s new plan to keep its data centers from stressing the grid, August 28, 2025 <https://www.canarymedia.com/articles/utilities/google-ai-data-center-flexibility-help-grid>
- Canary Media, Can crowdsourcing help solve the data-center power crunch, October 20, 2025. <https://www.canarymedia.com/articles/virtual-power-plants/voltus-supply-data-center-energy-needs-cloverleaf>
- Nature Sustainability, Environmental impacts and net-zero pathways for sustainable artificial intelligence servers in the USA, November 10, 2025.



<https://www.nature.com/articles/s41893-025-01681-y#Fig4>

DISCUSSION QUESTIONS: put your questions Canvas>Discussion Question>Week#

Week 11: Course Held at Regular Time During Finals Week!

Where the Rubber Meets the Road [\(Back to Top\)](#)

Guest Speaker: Dan James BPA

- Paper Presentations
- Course Evaluations:
- Team Paper Evaluations

Readings

- Randolph, J., & Masters, G. M. (2018). *Energy for sustainability: technology, planning, policy*. Island Press. Chapter 3: Energy Futures.
- BPA 2024-2028 Strategic Plan, <https://www.bpa.gov/-/media/Aep/about/who-we-are/strategic-plan/2024-2028-strategic-plan.pdf>

Course Policies

Grading Scale

Your grade will be calculated using the following scale. Grades with plus or minus designations are at my discretion.

Letter Grade	Grade Point	Description	Learning Outcome
A	4.0	Complete mastery of course material and additional insight beyond course material	Insightful
B	3.0	Complete mastery of course material	Proficient
C	2.0	Gaps in mastery of course material; not at level expected by the program	Developing
U	0	Unsatisfactory	Ineffective

Grading Details

Letter Grade	Range	Letter Grade	Range
A	93-100	C+	77-79



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A-	90-92	C	73-76
B+	87-89	C-	70-72
B	83-86	Let's talk	<70
B-	80-82		

Chat GPT (etc.) policy: Yes, you can use Chat GPT! But you need to use it as a starting point, not a finished product. Let's face it: Chat GPT can be wrong, really dry and imprecise, and boring (and biased). And you need to cite it. If you are going to cut and paste text (not encouraged) from ChatGPT then it needs to be indented and italicized like this:

"Guidelines for Using Chat GPT:

- 1. Use as a Supplementary Tool:*** Chat GPT should be considered a supplementary tool to enhance your research process. It is not a substitute for your own intellectual engagement and analysis. It should complement your own ideas and not dominate the narrative.
- 2. Citation Requirement:*** If you choose to incorporate insights or text generated by Chat GPT into your paper, it is crucial to provide appropriate citation. This helps maintain academic integrity and acknowledges the contribution of this tool to your work.

Example Citation:

For instance, if Chat GPT provides a helpful summary of a complex concept, you might cite it as follows:

According to the insights provided by Chat GPT, "quote from Chat GPT output" (OpenAI, Year)."

OpenAI, 25 September, 2023

Please email or talk to me with questions about Chat GPT.

- **Late work.** Late work is accepted, but you must notify me PRIOR to it being due, otherwise it will result in a penalty for tardiness of one full letter grade. This is done for equity reasons to level the playing field for those who manage to turn their work products in on time.
 - Incompletes are granted in the case of hardship but must be arranged prior to the end of last course session (Week 11).
- **Attendance.** Students are expected to attend all classes. Students who are unable to attend class must seek permission for an excused absence from me or my teaching assistant. Per department policy each unapproved absence will result in a ½ lower grade for the course. If a student has to miss a class, they should arrange to get notes from a fellow student.
 - If you observe a religious occasion on the same day as class, please let me know prior to the day of observance.

Learning expectations

Everyone is speaking on behalf of themselves as an individual, and not as a representative of their work (unless otherwise noted).



- **Be civil:** All discussions will be professional and not personal. If you have concerns about the class dialogue, please see me immediately, don't let issues with your classmates (or professors) fester.
 - Statements made in class by students and guest lecturers are assumed to **represent their opinion** (unless otherwise stated) and not any organization that they may work for.
 - Do not post any material from this course on a public-facing website without my approval.
- **Emotional subject matter:** This class contains analysis of topics that can bring forth emotional responses. Graduate school is not a twitter feed that one can scrutinize for PC-ness.
 - We want to build a strong container for the class so that students feel comfortable sharing their experiences and perceptions. Please support each other and me in building and maintaining the container! I tend to fall back on evidence-based arguments so keep me on track to elevate lived-experiences too!
- We will be recording the Zoom sessions for later review and integration
- Some (unfortunately) don'ts: Students are not to multi-task with extra-curricular activities during class.
 - Please do not surf the web or answer emails during class
 - Try to save your Zoom fatigue allotment for our class!
 - Turn off your video only for personal responsibilities or if you are emotionally exhausted.
- **Maintaining Confidentiality:** Class discussions benefit greatly when professional experiences and actual situations are incorporated to illustrate key issues. When discussing personal/professional experiences, students should avoid, insofar as possible, revealing the identities of colleagues or others whose confidentiality may be compromised in the course of the discussion. All students participating in class discussions should similarly maintain the confidence of their peers' experiences that are shared in the spirit of academic discourse.
- **How to be successful in this class**
 - 1) Build on the readings with [active studying](#), to integrate the material with your experiences and existing understandings. Then, you will be ready to ask questions (draft these prior to class to reduce stress about asking them).
 - 2) Complete ALL the assignments.
 - 3) Communicate with me about any barriers you are having in the class.

More Resources

Accommodations for Students with Disabilities: PSU values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. The Disability Resource Center (DRC) provides

reasonable accommodations for students who encounter barriers in the learning environment. If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. The DRC is located in 116 Smith Memorial Student Union, 503-725-4150, drc@pdx.edu or <https://www.pdx.edu/drc>

If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations. Please be aware that the accessible tables or chairs in the room should remain available for students who find that standard classroom seating is not useable.

- Mental Health Resources: Graduate school is a context where mental health struggles can be exacerbated. If you find yourself struggling, please ask for help. If you wish to seek out campus resources, here is some basic information about mental health resources at PSU: <https://www.pdx.edu/shac/counseling>

Title IX Discrimination and Harassment Policy: As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. We expect a culture of professionalism and mutual respect in our department and class. You may report any incident of discrimination or discriminatory harassment, including sexual harassment, to either the Office of Equity and Compliance or the Office of the Dean of Student Life.

- Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather share information about sexual harassment or sexual violence to a confidential employee who does not have this reporting responsibility, you can find a list of those individuals. For more information about Title IX, please complete the required student module Creating a Safe Campus in your Canvas.