



5.S00: Fifty Years of U.S. Energy Policy – Lessons for the Future

Open to undergraduate and graduate students; second half of fall term 2021

(Same subject as:)

Prerequisites: None

Units: 2-0-4

Review of the energy issues that arose and policy responses that arose from the Nixon administration in 1969 to the present administration of Joe Biden. What lessons can be learned and how should they shape the country's current climate policy? How might these lessons constrain our expectations about the pace, extent, and cost of progress? Both domestic and international policy aspects will be addressed.

"Those who fail to learn from history are condemned to repeat it." Winston Churchill

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Teaching Assistants:

Lectures: Tuesday Friday 9:30 to 11 in E25-111

Subject objective: Students will have the opportunity to compare the working of U.S. policies confronting a wide range of energy issues, from oil import dependence to nuclear nonproliferation, in an international context. The process will identify policy tools proven to be successful and those which have not and prepare the student to be a more informed and effective participant in the wide range of energy/climate policy deliberations that require difficult trade-offs and decisions. Participants will learn how evidence based analysis can contribute to desired outcomes while respecting views and interests of others.

Subject organization and requirements: Both undergraduate and graduate students are welcome. There are no prerequisites. The class will meet for 90 minute sessions, twice a week. Two brief papers (1000 words or less) and a final term paper will be assigned. The brief papers will ask students to express an opinion on a policy issue in order to facilitate class discussion. The student will choose a final paper topic from a list provided.

Grading: 1/3 on the short papers, 1/3 on the term paper, and 1/3 on classroom participation, which is vigorously encouraged.

Provisional list of topics to be covered:

Purpose and outline of the subject

Part I. U.S. Energy Policy History. (Five lectures)

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| 1. Nixon/Ford administrations | R. (1969 – 1977) |
| 2. Carter administration | D. (1977 – 1981) |
| 3. Reagan/George H.W. Bush administrations | R. (1981 – 1993) |
| 4. Clinton administration. | D. (1993 – 2001) |
| 5. George W. Bush administration | R. (2001 – 2009) |
| 6. Obama administration | D. (2009 – 2017) |
| 7. Trump administration | R. (2017 – 2021) |
| 8. Biden administration | D. (2021 –) |

Part II. Analyzing Lessons Learned. (Six lectures) Characterizing changes through different lenses: lifetime of energy policy initiatives, organization and implementation of energy programs, international energy aspects, and national security dimensions.

Technology Successes and Failures

Successes	Failures
Coal bed methane	Nuclear power: “too cheap to meter.”
Photovoltaic R, D, &D (but not manufacturing)	Nuclear waste disposal – just a technical problem
Nuclear reactor and enrichment development (but not deployment)	Large gov’t run demonstration projects, <i>e.g.</i> , Clinch River Breeder
Synthetic Fuels Corporation	Synthetic Fuels Corporation
Unconventional oil and natural gas production (hydraulic fracturing)	Magnetic and inertial confinement fusion.

Policy successes and failures:

Successes	Failures
Establishment of International Energy Agency	Assumed inevitable dependence on imported oil and supply disruption
National Energy Plan	Assumed inevitable dependence on imported natural gas
Implementing the Clean Air Act	North American energy integration
Nonproliferation policy (The Smiling Buddha 1974)	Coal generation for domestic electricity production
Establishing ARPA-E (but not the loan program)	Not ratifying the Kyoto Agreement; withdrawal from the Paris Agreement

Implications for Future U.S. Energy Policy.

- What carbon pricing policy: emission tax, cap-and-trade, national clean energy standard?
- How to set the target date for achieving a net-zero carbon emissions for the economy?
- What federal government actions and investments are Necessary to achieve net-Zero?
- Does the United States need a better balance between federal and state climate policy responsibilities?
- What steps need to be taken to assure U.S. innovation will be competitive in a decarbonized world?
- How can the United States best show international leadership: economic assistance to threatened vulnerable countries? Clean energy technology transfer to emerging economies? Reaching a compromise between a per capita and a per GDP equity standard?
- What unexpected actions may occur to disrupt climate progress?

John Deutch served as Director of Energy Research and Undersecretary of Energy in the Carter Administration and as Undersecretary of Defense for Science and Technology, Deputy Secretary of Defense, and Director of Central Intelligence in the first Clinton Administration. He was a member of President's Foreign Intelligence Advisory Board in the George H. W. Bush administration and a member of the President's Council on Science and Technology in the second Reagan and Clinton administrations.