

**International Studies Program
University of California, San Diego
Winter Quarter, 2022**

**INTL 190
“THE POLITICAL ECONOMY OF GLOBAL ENERGY”**

Instructor: Mikkal Herberg
Email: mherberg@ucsd.edu
Classes: Friday 11:00-1:50 pm
Room: Gardner Room - Remote Jan 7, 14, 21, 28
Office Hours: Friday 2:00-3:00 pm, or by appointment, or via Zoom

This course will analyze the political economy of global energy across a number of key themes and geographies. Two fundamental themes will be woven through the course. The first will be the geopolitics of energy markets and the relentless quest for energy security. Energy security is a critical ongoing strategic and economic challenge for every key region of the globe. Over 80% of global energy supplies still come from the three fossil fuels (oil, coal, natural gas) but the role of renewables and other lower carbon fuels and technologies is rising rapidly. Second, we will be focusing on the challenges of building a sustainable energy and climate future and managing the transition to a cleaner energy mix. The course will begin with an introduction to the basic elements of the energy industry and global energy markets. Emphasis will be placed on the oil industry due its pivotal role in global energy use, pricing, and geopolitics. The course will then turn to energy security and the geopolitics of energy in today’s highly politicized, volatile oil markets. The focus will then turn to the nexus between energy and the environment and the search for a more “sustainable” global energy future.

The majority of the course will focus on developing a more in-depth understanding of these themes through an examination of the major countries, regions, institutions, and political and economic forces in today’s world energy scene, including the U.S., China, Japan, India, Russia, OPEC and the Middle East, and Europe.

By the end of the course students should be able to:

- Describe major trends in global energy markets, including oil, natural gas, coal, renewables, and cleaner energy and climate sensitive trends.
- Describe the key energy security issues of importance globally and regionally, especially the vital energy security concerns of the major global powers, and their strategies for managing their energy security.
- Describe the dilemmas for energy policymakers among the largest global energy consumers to meet the challenge in accelerating their national transition from a fossil-fueled energy system towards a more sustainable energy future and their strategies to do so.

The course textbook is *The New Map: Energy, Climate, and the Clash of Nations* by Daniel Yergin (2020 Penguin Press), available at the bookstore, Amazon, or as an eBook. The text also will be on reserve at the library through the ARES system. Readings will be from the textbook, other

articles, and research reports available on the web or through the UCSD Library databases. I will post many of the readings in the class Canvas folder.

The class will be run as a graduate seminar, made up of a mix of lectures and class discussions. Grades will be based on class projects and class participation. Students are expected to do the assigned readings prior to class, *keep current on major energy issues in the news*, attend all classes and participate in class discussions. I will randomly call on students for their thoughts on the readings and topics during class....**so be prepared!**

After week 4 there will be a mid-term take-home graded exercise involving written answers to two or three discussion questions drawn from the first four weeks of class and readings.

A final project will be a research paper - an analysis of a key energy geopolitics, energy security, or energy-environment policy issue (roughly 4,000 words – 15 pages). You'll get more guidance on this project during the course. I will post a list of many possible topics you can choose from or you can choose something of special interest to you. You will need the approval of the instructor for your proposed topic. All research papers must be turned in through *Turnitin* service in the class Canvas Folder.

Evaluation of class participation will be based on the quality of contributions throughout the course. The research project will account for 60% of your grade, the mid-term discussion questions will account for 20%, and class participation in discussions will be 20%.

Academic Integrity: all work must be done exclusively by the individual to whom it has been assigned. Students should assume that collaboration on assignments, the use of previously assigned homework, outside sources or outside aids (both written and electronic) are not allowed unless explicitly approved by the professor. All cases of suspected cheating will be referred the International Studies Program. Any violation for which a student is found responsible is considered grounds for failure in the course.

January 7: *Introduction to the World Energy Industry and Markets (remote Zoom)*

January 14: *Energy Security and the Geopolitics of Energy (remote Zoom)*

Daniel Yergin, *The New Map*, Introduction.

Daniel Yergin, "Ensuring Energy Security", *Foreign Affairs* (March-April 2006) pp. 69-82.

Mark Finley, *Energy Security and the Energy Transition: A Classic Framework for a New Challenge*, Baker Institute for Public Policy Report (November 25, 2019).

Robin Mills, *Risky Routes: Energy Transit in the Middle East*, Brookings Doha Center Analysis Paper (Number 17, April 2016).

"The Geopolitics of Energy: Out with the Old, in with the New?", *Oxford Energy Forum*, Oxford Institute for Energy Studies (February 2021) Introduction, pp. 2-7.

January 21: *The Global Energy Transition: Searching for a More Sustainable Energy/Environment Balance*

Daniel Yergin, "The Climate Map", Chapters 41-46, pp. 377-422.

International Energy Agency, *Net Zero by 2050: A Roadmap for the Global Energy Sector*, Paris, (2021) Executive Summary, pp. 13-27.
COP-26 – *Examining the Balance Between Ambitious Pledges and Realistic Expectations*, Oxford Energy Forum, Issue 129 (September 2021) Introduction and Sections 2-3, pp. 3-12.
William Nordhaus, “Why Climate Policy Has Failed: And How Governments Can Do Better”, *Foreign Affairs* (October 12, 2021).
David G. Victor, “The Pandemic Won’t Save the Climate”, *Foreign Affairs* (May 7, 2020).
Mohamed Adow, “The Climate Debt: What the West Owes the Rest”, *Foreign Affairs* (May/June 2020).

January 28: *The Energy Transition and Low Carbon Technologies (continued)*

Daniel Yergin, “Roadmap”, Chapters 37-40, pp. 327-376.
Akos Losz and Jonathan Elkind, *The Role of Natural Gas in the Energy Transition*, Commentary, Columbia Center on Global Energy Policy (September 24, 2019)
Mark C. Thurber, *Coal, Gas or Nuclear: Asia’s Inconvenient Energy Choice*, Pacific Energy Summit Working Paper, The National Bureau of Asian Research (October 2016).
Cheryl Katz, “In Boost for Renewables, Grid-Scale Battery Storage Is on the Rise”, *YaleEnvironment360*, (December 15, 2020)
<https://e360.yale.edu/features/in-boost-for-renewables-grid-scale-battery-storage-is-on-the-rise>
Leslie Hook and Henry Sanderson, “How the race for renewable energy is reshaping global politics”, *FT Magazine, Financial Times* (2021).

Other Readings:

Henry Sanderson, “Battery Life: the race to find a storage solution for a green energy future”, *Financial Times* (November 21, 2020).
Dave Levitan, “First U.S. Small Nuclear Reactor Design is Approved: Concerns about costs and safety remain, however”, *Scientific American* (September 9 2020).
<https://www.scientificamerican.com/article/first-u-s-small-nuclear-reactor-design-is-approved/>
Ragnhildur Sigurdardottir, Akshat Rathi, “World’s Largest Carbon-Sucking Plant Starts Making Tiny Dent in Emissions”, *Bloomberg Green* (September 8 2021)
<https://www.bloomberg.com/news/features/2021-09-08/inside-the-world-s-largest-direct-carbon-capture-plant>
Vandana Hari, “Throttling oil and gas to protect the climate will backfire”, *NikkeiAsia* (September 9 2021)
<https://asia.nikkei.com/Opinion/Throttling-oil-and-gas-to-protect-the-climate-will-backfire>

February 4: *North America: U.S. - the global energy superpower*

Daniel Yergin, “America’s New Map”, Chapters 1-8, pp. 3-68.
Mark Finley and Kenneth Medlock, *Time to Update America’s Energy Security Programs*, Policy Brief, Baker Institute for Public Policy (January 2021).
Jason Bordoff, “The Myth of U.S. Energy Independence Has Gone Up in Smoke”, *Foreign Policy*, (September 18, 2019), <https://foreignpolicy.com/2019/09/18/the-myth-of-u-s-energy-independence-has-gone-up-in-smoke/>

Bill Gates, "4 ways the U.S. can reassert leadership on climate change", Gates Notes (January 22, 2021) <https://www.gatesnotes.com/Energy/4-ways-the-US-can-reassert-leadership-on-climate-change>

February 11: *China and Asia: "ground zero" for global energy demand*

Daniel Yergin, "China's Map", Chapters 17-25, pp. 129-192.

Kang Wu and Jane Nakano, *The Changing Political Economy of Energy in China*, Center for Strategic & International Studies (December 2016).

Michel Meidan, "China: Climate Leader and Villain", in *The Geopolitics of the Global Energy Transition*, Manfred Hafner, Simone Tagliapietra, eds., Springer OPEN (2020), pp. 75-90.

Smriti Mallapaty, "How China Could be Carbon Neutral by Mid-Century", *Nature* (October 22, 2020).

John Lee, "China's Geostrategic Search for Oil", *The Washington Quarterly*, Vol. 35, No. 3 (Summer 2012) pp. 75-92.

February 18: *China (cont.), Japan, South Korea, India and Southeast Asia*

Phyllis Yoshida, *Japan's Energy Conundrum*, Sasakawa Peace Foundation USA, Washington, D.C. (February 2017), Chapter 1 and 4, pp. 1-11, 37-46.

Ken Koyama, "Energy and Climate Policy Challenges for Japan Toward Carbon Neutrality in 2050", in *COP-26 – Examining the Balance Between Ambitious Pledges and Realistic Expectations*, Oxford Energy Forum, Issue 129 (September 2021).

Richard Katz, "Japan's Looming Climate Showdown", *Foreign Affairs* (April 21, 2021).

Aparajit Pandey, *India's Low Carbon Transition*, Observer Research Foundation, New Delhi (2017).

Leszek Buszynski, "The South China Sea: Oil, Maritime Claims, and U.S.-China Strategic Rivalry", *The Washington Quarterly*, Vol. 35, No. 2 (Spring 2012), pp. 139-156.

February 25: *OPEC, the Middle East, and the producing countries: the global oil balance wheel*

Daniel Yergin, "Maps of the Middle East", Chapters 26-36, pp. 193-326.

Saudi Arabia: The Power Behind OPEC, Issue Brief, Securing America's Future Energy, Washington, D.C. (November 2016).

The GCC and the New Oil World, Columbia University Center on Global Energy Policy (January 2016).

John W. Garver, *China and Iran: An Emerging Partnership Post-Sanctions*, Middle East Institute Policy Focus 2016-3 (February 2016).

March 4: *Russia, the Caspian, and Central Asia*

Daniel Yergin, "Russia's Map", Chapters 9-16, pp. 69-128.

Tatiana Mitrova, *Shifting Political Economy of Russian Oil and Gas*, CSIS Energy and National Security Program (March 2016).

Keun-Wook Paik, *Sino-Russian Gas and Oil Cooperation: Entering into a New Era of Strategic Partnership?*, Oxford Institute for Energy Studies Paper WPM 59 (April 2015).

March 11: *Europe: energy security, Russia, pipeline geopolitics*

Heather Grabbe and Stefan Lehne, *Climate Politics in a Fragmented Europe*, Carnegie Endowment (December 2019).

Marc Pierini, *Russia's Energy Politics and Its Relevance for the European Union*, Carnegie Endowment, Brussels (June 2019).

Alan Riley, *Nord Stream 2: Understanding the Potential Consequences*, Global Energy Center, Atlantic Council (June 2018).

Mark Leonard, et.al., "The EU Can't Separate Climate Policy from Foreign Policy", *Foreign Affairs* (February 9, 2021).

Friday March 18 – Final Research Paper Project Due