ENERGY & INTERNATIONAL SECURITY

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INTA 3042
Fall 2022
Weds. 6:30-9-15pm
MRDC 3403

DESCRIPTION & OBJECTIVES

This course examines issues at the intersection of national energy security/sustainability and international conflict/cooperation. Is oil or natural gas import dependence a foreign policy liability, boon for global energy transition, or cause for war? Is energy a domain ripe for gray zone or hybrid warfare? Or, do globalization and the interdependence of energy markets favor international cooperation and peace? More specifically, can supplier states such as Saudi Arabia and Russia use hydrocarbon exports as lasting energy weapons over the "West"? Or, will volatile oil prices, as well as the promise of U.S. natural gas exports and the global energy transition lock in a strategic pivot away from the Persian Gulf and reinvigorate America's political leverage, especially amid growing local demand across the Middle East and East Asia? Will this give grist to future U.S. energy sanctions on Russia, Iran, Venezuela and other strategic rivals, or stoke instability across the Middle East and Eurasia? Are the U.S. and China doomed to compete for access to global energy supply? Will there be a nuclear energy renaissance, and if so, will it increase the likelihood of weapons proliferation and/or regional conflict? Similarly, do innovations that ease distribution of renewable energy, allow for the circular flow of hydrocarbons, promote local sustainability, and/or fuse energy with information systems reduce risks of resource wars, lower barriers to cross-border conflict, and augur well for global governance? Can energy innovation provide a competitive advantage for U.S. grand strategy?

Students are introduced to major theoretical and policy analytical lenses used to examine critical geopolitical and geoeconomic issues associated with national pursuits of energy security and sustainability. The above questions and others will be probed by dissecting the complex interaction between resource endowments, technologies/innovation, economics, politics, power, and strategy in the oil, natural gas, nuclear, and alternative energy sectors; and by analyzing the implications for broader themes and concepts of security, statecraft, and governance in international relations. Accordingly, the course is structured around historical and comparative analysis of core issues in each sector that cut across different states and regions related to resource scarcity, market dynamics, trade vulnerability, corporate behavior, policymaking, national welfare and threat perceptions, and strategic interaction.

Learning Outcomes

Students will demonstrate proficiency at critiquing alternative explanations for international energy competition/conflict/war and assessing systematically the respective policies, institutions, and technologies adopted to bolster energy security and sustainability by different actors across the international system. In studying energy systems across different sectors, they also will acquire knowledge about the relationship between science, technology, and international affairs, more broadly. In addition, students will enhance their professional development by learning to communicate effectively at applying critical analysis for generating concrete policy recommendations on international security issues at the nexus of energy resources, technologies/infrastructure, trading, governance, and sustainable social systems at the national, and global levels.

COURSE MODALITY & FORMAT

This semester the course will be offered in full residential mode, with lectures/discussions delivered in-class. Depending on local COVID risk assessment and in accordance with GT and CDC guidelines, we may alter individual lectures to include remote delivery. Students will be notified in advance of these temporary adjustments. Updated announcements will be posted in CANVAS throughout the semester together with course material. Students with accommodations should follow up with me at the beginning of the semester.

The dedicated course period will consist of lectures, discussion and in-class interactive activities. There will be occasional guest speakers (virtual and in-class) during these sessions. In-class activities will be augmented by weekly reading, short assignments, documentaries and other materials in between class sessions. As per GT guidelines, face masks will be strongly encouraged for everyone, all the time, and irrespective of testing and COVID vaccine status. Students also are urged to test regularly. For more information on GT COVID-related policies, decision tree, testing, and vaccine information throughout the semester, see especially: https://health.gatech.edu/coronavirus/faqs.

COURSE REQUIREMENTS & GRADING

Students are expected to complete the required weekly reading and other assignments before each class, and to contribute actively to all in-class discussions/activities. Most classes will begin with a lecture on the designated topic, and conclude with a structured discussion/activity of a major conceptual puzzle and attendant policy debate. On occasion, students may be asked to engage in limited chats and other informal discussion threads in between classes via CANVAS.

Students will take an in-class exam on **October 4th**. This will consist of short answer identifications of key terms and concepts drawn from the lectures, reading, and other material covered in Module 1.

Each student will be responsible for drafting one short (3-4 pages, double-spaced) critical review of official and/or expert commentary on the international security implications of the changing energy landscape or related climate developments related to a topic of her/his choosing covered in Modules 2 & 3. This can include presentations on campus (e.g. public talks, in-class guest lectures), government statements, expert blogs or other on-line commentary, articles in policy journals/outlets, etc. The review should consist at least of a brief summary of the main argument of the targeted commentary, and an analytical and empirical critique. Critical reviews can be turned in at the student's discretion **on or before November 8th**.

Each student will participate in a dynamic course policy simulation that will take place during the November 15th and 29th class periods (Module 4). The specific scenario and format of the simulation will be discussed in class. As part of the preparation, each student will be required to write a short background paper (3-4 pages, double-spaced) and contribute to drafting a group policy position paper (7 pages, double-spaced). For the first background paper each student will summarize the policy issues at stake from the respective national or agency perspective. This should be augmented by identifying the specific issues of concern to the institutional or corporate actor played by the student on the national team. The second paper will be collectively written by respective national/transnational/corporate teams, laying out the initial policy positions and objectives for the designated scenario. Both papers will be due at the onset of the simulation on **November 15th**. Each student will participate actively in all group problem-solving and deliberative exercises during the two-day policy simulation.

Finally, students are required to write a policy memo (8-10 pages) on a topic at the intersection of energy and national security relevant to a theme covered during the course. Examples can include:

(1) How should the United States respond to continuing Russian energy pressure on Central and Eastern European countries in the wake of the wart in Ukraine?
(2) How should the United States prepare for and respond to a potential blockage of sea lanes in the Straits of Malacca?
(3) What should the United States do about the challenges affecting the nuclear power industry and how can this advance nonproliferation goals?
(4) What are the greatest challenges at the intersection of emerging energy technologies and national security and how can the United States meet them?
(5) Another related topic of choice with approval from instructor.

The memo will be addressed to the U.S. National Security Advisor and will: (1) succinctly frame the issue for consideration, putting it into a broader context and offering clarity about why it is important that it be addressed promptly; (2) set forth a range of policy options (optimally between three and five) for addressing the issue and discuss the pros and cons of each option; and (3) make a recommendation for Presidential action among those options. The idea is not to do extensive additional research but to use the readings and class lectures/discussions as a foundation for this endeavor. A one-page summary of the topic

must be turned in no later than **November 8th**. The final paper must be submitted by **December 11th at 6 pm.** No late papers will be accepted.

Grading

Class & Online Participation		10%
In-class Mid-term		20%
Critical Review Essay		10%
Simulation		30%
Individual paper	5%	
Group paper	10%	
Participation	15%	
Final Paper		30%

READING

(Available for Purchase at GT Barnes & Noble Bookstore)

Meghan O'Sullivan, *Windfall: How the New Energy Abundance Upends Global Politics and Strengthens America's Power* (New York: Simon & Schuster, 2017);

Per Hogselius, *Energy and Geopolitics* (New York: Routledge, 2019);

Charles Ferguson, *Nuclear Energy: What Everyone Needs to Know* (New York: Oxford University Press, 2011); and

Daniel Yergin, *The New Map: Energy, Climate, and the Clash of Nations* (New York: Penguin Press, 2020).

*Jeff D. Colgan, *Partial Hegemony: Oil Politics and International Order* (New York: Oxford University Press, 2021).

*Emma Ashford, *Oil the State and War* (Washington, DC: Georgetown University Press, 2022)

*Recommended

USEFUL LINKS

Baker Institute, Energy Forum Research, http://www.rice.edu/energy/research/

Atlantic Council (Eurasian Energy Futures Initiative), http://www.atlanticcouncil.org/programs/dinu-patriciu-eurasia-center/eurasian-energy-futures

BP Energy Outlook, https://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html

CIA "The World Fact Book", https://www.cia.gov/library/publications/the-world factbook/index.html

Council on Foreign Relations, (Energy and Environment; Geopolitics of Energy)
http://www.cfr.org/publication/20511/energyenvironment.html?breadcrumb=%2Fissue%2F17%2Fenergyenvironment
https://www.cfr.org/geopolitics-energy
Energy Information Agency – Country Analysis Briefs. http://www.eia.doe.gov/cabs/
Center for New American Security (Energy, Economics, Security),
https://www.cnas.org/research/energy-economics-and-security
ExxonMobil, Outlook for Energy,
https://corporate.exxonmobil.com/Energy-and-environment/Looking-forward/Outlook-for-Energy
Cambridge Energy Resource Associates,
http://www.cera.com/aspx/cda/public1/home/home.aspx
Energy Policy Research Foundation, Inc., http://eprinc.org/?page_id=58
MIT Energy Initiative, http://energy.mit.edu/
Harvard University, Belfer Center, Energy Technology Innovation Policy
http://belfercenter.ksg.harvard.edu/project/10/energy_technology_innovation_policy.html
Harvard University, Belfer Center, The Geopolitics of Energy Project
http://belfercenter.ksg.harvard.edu/project/68/geopolitics_of_energy_project.html
Intergovernmental Panel on Climate Change, https://www.ipcc.ch/about/
International Energy Agency: http://www.iea.org/
Center for New American Security (Energy, Economics, & Security),
https://www.cnas.org/research/energy-economics-and-security
Center for Strategic and International Studies (Energy & Geopolitics),
https://www.csis.org/topics/energy-sustainability/energy-geopolitics
Oil Drum Blog: http://www.theoildrum.com/
Columbia University/SIPA Center on Global Energy Policy,
http://energypolicy.columbia.edu/
Oxford Institute for Energy Studies, http://www.oxfordenergy.org/research.shtml
Nuclear Threat Initiative, https://www.nti.org/.
Stanford University, Precourt Center for Energy Research, http://pie.stanford.edu/
White House Blog: Energy and the Environment:
http://www.whitehouse.gov/blog/issues/Energy-%2526-Environment
World Bank Energy:
http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTENERGY2/0,,menuPK:4114636~pagePK:149018~piPK:149093~theSitePK:4114200,00.html
LexisNexis accesses hundreds of energy sources: Platts, Oil and Gas Journal, Petroleum Economist, among many others.

DECORUM & INTEGRITY

Learning together requires that everyone must feel welcome and able to trust others in the class. A central aim of the course is to encourage students to think and be critical. Accordingly, all students are expected to exchange freely ideas while respecting the opinions of each other. Similarly, each student must recognize that academic dishonesty

(such as cheating on a test/quiz or plagiarism on a paper) completely undermines the mission of this course, is surprisingly easy to detect, and is taken very seriously by the Institute. Do not be tempted to take a short cut to complete an assignment— consult the GT honor code/Honor Advisory Council http://www.policylibrary.gatech.edu/student-affairs/academic-honor-code -- if there are any questions. Students must turn off cell phones, pagers, and other electronic devices that could be distracting during all synchronous activities.

COURSE SCHEDULE

MODULE 1: ENERGY FUNDAMENTALS & IR SECURITY

Aug. 23: Introduction: Energy Systems, National Security & Geopolitics

Reading:

Global Energy Institute, *International Index of Energy Security Risk* (peruse)
https://www.globalenergyinstitute.org/sites/default/files/IESRI-Report_2020_4_20_20.pdf

IEA, "World Energy Outlook, 2022 Executive Summary"
https://www.iea.org/reports/world-energy-outlook-2022/executive-summary

EIA, International Energy Outlook 2021," (pdf)
https://www.eia.gov/outlooks/ieo/pdf/IEO2021_ReleasePresentation.pdf

BP Energy Future vs. Exxon Outlook for Energy 2022 (peruse)
https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2023.pdf

https://corporate.exxonmobil.com/what-we-do/energy-supply/outlook-for-energy

Aug. 30: Energy Basics (Oil, Natural Gas, and the Nuclear Fuel Cycle)

Reading:

EIA, "Energy Explained," ("What is Energy" thru "Secondary Resources"), https://www.eia.gov/energyexplained/

Michelle Melton, Annie Hudson, and Sarah Ladislaw, "Energy 101: Introduction to Oil," https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/150910_oil.pdf

"Energy 101: Introduction to Natural Gas,"
https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/Natural_Gas_101.pdf
"Alternative Energy: Historical Time-Line" (peruse)
http://alternativeenergy.procon.org/view.resource.php?resourceID=002475
Hogselius, Chps. 1-2**;**
Ferguson, Chps, 1-5, 7, 8.

Recommended:
*The World Bank Group, "The Petroleum Sector Value Chain," (2009)/CANVAS

Sept. 6: **Hydrocarbon Century & Geopolitics: From "King Coal" to the Rise of "Big Oil" & OPEC**

Reading:
Price-Smith, Chp. 1/CANVAS;
James D. Hamilton, "Historical Oil Shocks," unpublished draft (February 2011), http://econweb.ucsd.edu/~jhamilton/oil_history.pdf
Colgan, Chp. 4/CANVAS.
Brian C. Black, "Exxon's Rex Tillerson & the Rise of Big Oil in American Politics," *The Conversation* (January 31, 2017). http://theconversation.com/exxons-rex-tillerson-and-the-rise-of-big-oil-in-american-politics-70260
O'Sullivan, Chp. 1
Watch: "The Prize," Parts 5&6/CANVAS Module 1

Recommended:
*Watch "The Prize" Parts 1, 2, 4 & 7 (YouTube)
*Colgan, Chp. 3/CANVAS.
*****Roger Stern, "Oil Scarcity Ideology in US Foreign Policy, 1908-97," *Security Studies* 25:2 (2016), pp. 214-257/CANVAS.

Sept. 13: **Energy Markets, Prices, Peaks, and Curses**

Reading:
Hogselius, Chp. 4
Yergin, Chps. 2-4;
O'Sullivan, Chp. 2
Campbell-Lynch Debate, *Oil & Gas Journal*, 14 July 2003/CANVAS
Michael Ross, "Does Oil Hinder Democracy," *World Politics* 53 (April 2001), pp. 325-61)/CANVAS.

EIA, "What Drives Crude Oil Prices: Overview," (From spot prices-Demand OECD), https://www.eia.gov/finance/markets/crudeoil/
EIA, "What Drives Petroleum Product Prices: Overview," (From price balance), https://www.eia.gov/finance/markets/products/

Recommended:
*Robert McNally, "Crude Volatility," Chps. 9 & 10/CANVAS
*Andre Mansson, "A Resource Curse for Renewables?: Conflict and Cooperation in the Renewable Energy Sector," *Energy Research & Social Science* (2015)/CANVAS.
*****Benjamin K. Sovacool and Marilyn Brown, "Competing Dimensions on Energy Security: An International Perspective," GT/IAC Public Policy Working Paper #45 (13 January 2009)/CANVAS
*Jason Bordoff and Meghan L. O'Sullivan, "The Age of Insecurity," *Foreign Affairs* (May/June 2023)/CANVAS.
*Oluwasegun B. Adekoya, et. Al., "Does Oil Connect Differently with Prominent Assets During War?" *Resources Policy* 77 (2022). CANVAS.
*Ashford, Chp. 5/CANVAS.

Sept. 20: Energy & IR Security Nexus

Guest Speaker: U.S. State Department Official (TBD)

Reading:
Hogselius, Chp. 3 (peruse), 5-7.
O'Sullivan, Chps. 5-6.
Yergin, Chp. 8.
David Victor and Rebuttals, "What Resource Wars?", *The National Interest*, Nov/Dec 2007 and Jan/Feb, 2008/CANVAS;
Eugene Gholz, "The Strait Dope: Why Iran Can't Cut off Your Oil," *Foreign Policy* (Sept/Oct. 2009) http://www.foreignpolicy.com/articles/2009/08/12/the_strait_dope
Jeff D. Colgan, "Fueling the Fire: Pathways from Oil to War," *International Security* 38:2 (Fall 2013), pp. 147-189/CANVAS
Peter Toft, Arash Duero, Arunas Bieliauskas, "Terrorist Targeting and Energy Security," *Energy Policy* 38 (2010), pp. 4411-4421/CANVAS.
Jane Nakano, *The Geopolitics of Critical Minerals Supply Chains* (Washington, DC: CSIS March 2021), https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/210311_Nakano_Critical_Minerals.pdf?DR03x5jIrwLnNjmPDD3SZjEkGEZFEcgt
Ashford. Chp. 6/CANVAS.

Recommended:

*Jeff Colgan, Chp. 5/CANVAS;

*****Kenneth A. Schultz, "Mapping Interstate Territorial Conflict: A New Data Set and Applications," *Journal of Conflict Resolution* (2015)/CANVAS

*Llewelyn Hughes and Austin Long, "Is There an Oil Weapon?: Security Implications of Changes in the Structure of the Oil Market," *International Security* 39:3 (Winter 2014/15), pp. 152-189/CANVAS.

*Ashford, Chp. 7/CANVAS.

*ICSR Report, "Caliphate in Decline: An Estimate of Islamic State's Financial Fortunes," *ICSR Kings College* (2017), http://icsr.info/wp-content/uploads/2017/02/ICSR-Report-Caliphate-in-Decline-An-Estimate-of-Islamic-States-Financial-Fortunes.pdf. (peruse)

*Georg Struver and Tim Wegenast, "The Hard Power of Natural Resources: Oil and the Outbreak of Militarized Interstate Disputes," *Foreign Policy Analysis* 14 (2018), pp. 86-106/CANVAS

*Ferguson, Chp. 6.

MODULE 2: U.S. ENERGY POLICY & STRATEGIC INTERACTION

Sept 27: Energy, Climate & U.S. National Security Policymaking

Guest Speaker: Mr. Peter Harrel, former Senior Director for International Economics and Competitiveness on the White House National Security Council Staff and Amb. (ret.) Lawrence Silverman (TBD).

Reading:

DOE History (peruse), https://www.energy.gov/lm/doe-history

"FACT SHEET: President Biden to Galvanize Global Action to Strengthen Energy-Security and Tackle the Climate Crisis Through the Major Economies Forum on Energy and Climate," (June 17, 2022) https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/17/fact-sheet-president-biden-to-galvanize-global-action-to-strengthen-energy-security-and-tackle-the-climate-crisis-through-the-major-economies-forum-on-energy-and-climate/

Jason Bordoff and Meghan O'Sullivan, "The New Energy Order," *Foreign Affairs (*July/August 2022)/CANVAS.

"President Donald J. Trump Has Unleashed American Producers and Restored our Energy Dominance," (July 29, 2020) https://trumpwhitehouse.archives.gov/briefings-statements/president-donald-j-trump-unleashed-american-producers-restored-energy-dominance/

Yergin, Chps. 4 & 7, and 42.

"The National Laboratories: US Powerhouses of Science and Technology," https://nationallabs.org

Sara R (Rose) Rinfret, Denise L. Scheberle, and Michelle C. Pautz, *Public Policy: A Concise Introduction* (Washington, DC: Congressional Quarterly Press, 2018), Chp. 10/CANVAS.

Sarah Ladislaw and Nikos Tsafos, *Race to the Top* (Washington, DC, CSIS, July 2020), Chp. 1 https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/200706_SRF_RacetotheTop_WEB_v2%20FINAL.pdf

Recommended:

*Yergin, Chps. 26-36 (peruse)

*Jonathan Elkind, "US Clean Energy Transition and Implications for Geopolitics," in Manfred Hafner and Simone Tagliapietra, eds., *The Geopolitics of the Global Energy Transition* (Cham, Switzerland: Springer Open, 2020), pp. 47-74/CANVAS.

*Special Report: Global Warming of 1.5 by the Intergovernmental Panel on Climate Change: https://www.ipcc.ch/sr15/download/

*O'Sullivan, Chps. 4 & 11

*"Joint Statement by President Biden and President von der Leyen," 10 March 2023, https://ec.europa.eu/commission/presscorner/detail/en/statement_23_1613

Oct. 4: **Mid-term**

Oct. 11: **Russia & Eurasia: Energy Great Power & Great Game Redux**

Guest Speaker: Ibrahim AlMuhanna, former Advisor to the Ministry of Energy of the Kingdom of Saudi Arabia

Reading:

Yergin, Chps. 9-16 (peruse).

O'Sullivan, Chps. 8-10.

German Marshall Fund "Illicit Influence: The Energy Weapon," Report from the Alliance for Securing Democracy & C4ADS, https://d2llho1jqyw8vm.cloudfront.net/wp-content/uploads/2019/04/Illicit-Influence-Pt-2_Preview-PDF.pdf

Maria Snegovaya, "What Factors Contribute to the Aggressive Foreign Policy of Russian Leaders," *Problems of Post-Communism* 67:1 (2020)/CANVAS

"Impact of Russia's Invasion of Ukraine on the Markets: EU Response," *Council of the European Union* (2023), https://www.consilium.europa.eu/en/policies/eu-response-ukraine-invasion/impact-of-russia-s-invasion-of-ukraine-on-the-markets-eu-response/

Ibrahim AlMuhanna, *Oil Leaders: An Insider's Account of Four Decades of Saudi Arabia and OPEC's Global Energy Policy* (New York: Columbia University Press, 2022), Chp. 10/CANVAS.

Recommended:

*Christina M. Stoelzel Chadwick and Andrew G. Long, "Foreign Policy Alignment and Russia's Energy Weapon," *Foreign Policy Analysis* (2023)/ CANVAS

*Agha Bayramov, "Conflict, Cooperation, or Competition in the Caspian Sea Region: A Critical Review of the New Great Game Paradigm," *Caucasus Survey* 9:1 (2021), pp. 1-20/CANVAS.

*Natalie Koch & Veli-Pekka Tynkkynen, "The Geopolitics of Renewables in Kazakhstan and Russia," *Geopolitics* 26:2 (2021), pp. 521-540/ CANVAS.

Oct. 18: China & the Rise of Asia

Watch: "The Power of Big Oil (Frontline 3-Part Series)
https://www.pbs.org/wgbh/frontline/documentary/the-power-of-big-oil/

Reading:

Yergin, Chps. 17-25.

Janet Xuanli Liao, "China's Energy Diplomacy Towards Central Asia and the Implications on Its 'Belt and Road Initiative'," *The Pacific Review* (2020)/CANVAS

Jeffrey Ball, "Grow Green China Inc.: How China's Epic Push for Cleaner Energy Creates Economic Opportunity for the West," *Brookings Paper 8,* May 2019/CANVAS.

Tom Stefanick, "Secure Power: Gigawatts, Geopolitics, and China's Energy Internet," *Brookings Institution* (April 2022), file:///Users/as197/Desktop/FP_20200427_secure_power_stefanick.pdf. CANVAS

Zoe Leung, "In the Name of Energy Security, China is Doubling Down on Both Renewables and Coal," *The Diplomat* (29 June 2023), https://thediplomat.com/2023/06/in-the-name-of-energy-security-china-is-doubling-down-on-both-renewables-and-coal/

Recommended:

*Jonna Nyman, "Red Storm Ahead: Securitization of Energy in US-China Relations," *Millenium* 43:1 (2014), pp. 43-65/CANVAS

* Samir Tata, "Deconstructing China's Energy Security Strategy," *The Diplomat.com* (January 14, 2017), https://thediplomat.com/2017/01/deconstructing-chinas-energy-security-strategy/

*****Chia-yi Lee, "China's Energy Diplomacy: Does Chinese Foreign Policy Favor Oil-Producing Countries?" *Foreign Policy Analysis* 14:4 (October 2019)/CANVAS

*Kai-Hua Wang, Chi-Wei Su, Muhammad Umar, "Geopolitical Risk and Crude Oil Security: A Chinese Perspective," *Energy* 219 (2021)/CANVAS.

MODULE 3: CONTEMPORARY POLICY CHALLENGES

Oct. 25: The Age of Natural Gas: From Pipeline Politics to Energy Networks

Guest Speaker: Mr. John Cheek, Geoscience Manager (ret.), XTO Energy Inc.

Reading:

O'Sullivan, Chps. 3, Section 2; Conclusion

Yergin, Chp. 6.

Adam N. Stulberg, "Eurasia's Pipeline Tangle," *Russia in Global Affairs* (24 September 2011) http://eng.globalaffairs.ru/person/p_2445

International Crisis Group," Rethinking Gas Diplomacy in the Eastern Mediterranean (26 April 2023), https://icg-prod.s3.amazonaws.com/s3fs-public/2023-04/240-east-med-gas-diplomacy.pdf

Jonathan Elkind and Tim Boersma, Talking Past Each Other: Transatlantic Perspectives on European Gas Security, *Columbia SIPA: Center on Global Energy Policy,* May 2018/CANVAS.

Recommended:

*Pierre Noel, "Nord Stream II and Europe's Strategic Autonomy," *Survival* 61:6 (December 2019-January 2020)/CANVAS

*Adam N. Stulberg, "Natural Gas and the Russia-Ukraine Crisis: Strategic Restraint and the Emerging Europe-Eurasia Gas Network," *Energy Research & Social Science* 24 (February 2017), pp. 71-85./CANVAS.

*Jessica Jewell, Marta Vetier, Daniel Garcia-Cabrera, "The International Technological Nuclear Cooperation Landscape: A New Dataset and Network Analysis," *Energy Policy* 128 (May 2019)/CANVAS

Nov. 1: Contemporary Energy Technology & Energy Security Challenges

Guest Speaker: Professor Matthew Realff, School of Chemical and Biomolecular Engineering

Reading:

Yergin, Chps. 41, 43-36

Nicola de Blasio and Fridolin Pflugmann, "The Geopolitics of Renewable Hydrogen," Belfer Center, Harvard University, May 2021 https://www.belfercenter.org/sites/default/files/2021-05/GeopoliticsHydrogen.pdf

David Victor and Kassia Yanosek, "The Next Energy Revolution: Promise and Peril of High Technology Innovation," *Foreign Affairs*, July/August 2017. CANVAS.

Center for Naval Analyses, "Advanced Energy and National Security," 2017 https://www.cna.org/CNA_files/PDF/IRM-2017-U-015512.pdf

"Sustainable Synthetic Carbon-Based Fuels for Transport," *The Royal Society* (2019). CANVAS.

Recommended:

*Wolfram Lacher and Dennis Kumetat, "The Security of Energy Infrastructure and Supply in North Africa: Hydrocarbons and Renewable Energies in Comparative Perspective," *Energy Policy* 39 (2011), pp. 4466-4478/CANVAS

*Meghan O'Sullivan, Indra Overland, and David Sandalow, "The Geopolitics of Renewable Energy," Working Paper CGEP/Belfer-NUPI (June 2017), https://energypolicy.columbia.edu/sites/default/files/CGEPTheGeopoliticsOfRenewables.pdf

*Manfred Hafner and Michel Noussan, "Technologies for the Global Energy Transition," in Manfred Hafner and Simone Taliapietra, eds., *The Geopolitics of the Global Energy Transition*. CANVAS.

Nov. 8: **Changing Nuclear Landscape: Implications for Energy & International Security**

Reading:

Ferguson, Chps. 3-5;

Laura S. H. Holgate and Sagatom Saha, "America Must Lead on Nuclear Energy to Maintain National Security," *The Washington Quarterly* 41:2 (2018)/CANVAS

"The U.S. Nuclear Energy Enterprise: A Key National Security Enabler," A Special Report by the Energy Futures Initiative (August 2017), https://static1.squarespace.com/static/58ec123cb3db2bd94e057628/t/5992f7e0bf629ad8f9d575ec/1502803938248/EFI+Nuclear+Report+FINAL+08.2017.pdf

Anna J. Davis, "The Role of Nuclear Energy in the Global Energy Transition," *Oxford Institute for Energy Studies* (August 2022). CANVAS.

Pierre Goldschmidt, "Multilateral Nuclear Fuel Supply Guarantees & Spent Fuel Management: What are the Priorities?" *Daedalus* (Winter 2010), pp. 7-19/CANVAS.

Jane Nakano, *The Changing Geopolitics of Nuclear Energy: A Look at the United States, Russia, and China* (Washington, DC, CSIS 2020), https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/200416_Nakano_NuclearEnergy_UPDATED%20FINAL.pdf?heOTjmYgA_5HxCUbVIZ2PGedzzQNg24v

Recommended:

*Christoph Bluth, Matthew Kroenig, Rensslelear Lee, William C. Sailor, and Matthew Fuhrmann, "Civilian Nuclear Cooperation and the Proliferation of Nuclear Weapons," *International Security* 35:1 (Summer 2010). CANVAS.

*Nicholas Miller, Why Nuclear Energy Programs Rarely Lead to Proliferation," *International Security* 42:2 (Fall 2017). CANVAS

*Adam N. Stulberg, "Internationalization of the Fuel Cycle and the Nuclear Energy Renaissance: Confronting the Credible Commitment Problem," in Adam N. Stulberg and Matthew Fuhrmann, eds., *The Nuclear Renaissance and International Security (*Stanford: Stanford University Press, 2013) (CANVAS).

*Eliza Gheorghe, "Proliferation and the Logic of the Nuclear Market," *International Security* 43:4 (Spring 2019)/CANVAS

*"Final Report," Investigation Committee on the Accident at the Fukushima Nuclear Power Station, Executive Summary/CANVAS, peruse.

MODULE 4: IN-CLASS SIMULATION

Nov. 15: **In-Class Simulation 1 (TBA)**

Nov. 22: **NO CLASS: THANKSGIVING HOLIDAY**

Nov. 29: **In-Class Simulation (Last Class)**

Dec. 6: **NO CLASS/READING DAY**

Dec. 11: **FINAL POLICY MEMOS DUE 6:00PM**