

IGA 412: The Geopolitics of Energy

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Harvard University's Kennedy School

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Syllabus as of First Day of Classes 5 September 2012

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Course Description

Energy has long been a major factor in the formulation of country strategies, the exercise of national power, and in determining the shape of the international system. As both concerns about oil supply and pressures to reduce carbon emissions intensify, countries are grappling to situate their energy policies in the broader context of their grand strategies. Recent tensions between Israel and Lebanon over new natural gas findings in the Mediterranean Sea, China's seemingly relentless global quest for natural resources, and sanctions on oil exports from Iran due to its nuclear pursuits demonstrate the nexus between international politics and energy needs.

The Geopolitics of Energy will examine this intersection between international security, politics, and energy issues. The course takes energy security as its launching point, exploring not only how countries shape their grand strategies to meet their energy needs, but also how such actions have implications for other countries and the international system. It looks at new technologies and innovations – such as those making the extraction of shale gas economical – and how they are changing patterns of trade and could shape new alliances. Finally, while acknowledging that oil and gas will be dominant for the next 20-40 years, the course considers the consequences of a successful shift away from petroleum based economies to anticipate how a new energy order will alter global politics in fundamental ways.

Four objectives define the course. Students can expect to 1) gain a greater understanding of the energy security concerns of producer and consumer countries; 2) identify and analyze how countries have altered their foreign policies, domestic efforts, and military strategies in light of such concerns; 3) examine shifting trends in the energy realm; and 4) anticipate new patterns and structural shifts in the international environment in light of these trends.

The course begins with an introductory section examining how energy has been a major determinant of the international system in the past and exploring the current landscape in terms of markets, governments, businesses, and international institutions. It then turns to examine resource realities, including the question of whether global supply has peaked, the rise of resource nationalism, and the nature of the resource curse. The course then examines a number of ways – in the past, present, and possibly, in the future – how energy has been used as a means to project power; we look at how America, OPEC, Russia, and others have used energy to advance broader national security aims. The next section then explores the reverse: how countries and entities have used their more conventional military, political, and economic power to protect and secure energy; how should we view the U.S. presence in the Gulf or China’s actions in Africa? After a brief examination of national security strategies and their geopolitical implications, the class concludes with a section on new energy, asking how future developments in energy innovation will affect the nature of politics and security.

In addition to engaging in class discussions about topics as varied as whether the United States should seek to emulate China’s strategy to secure energy to whether low energy prices are good for political reform in Iraq, students will be required to adopt and represent the perspective of one country throughout the course.

Course Expectations and Requirements

IGA 412 is a graduate level course appropriate for those with an interest in energy and international politics and strategy. There are no prerequisites for the course. The focus of the readings, lectures, class conversations and projects will be more political and strategic than technical in nature. Students must be able to attend all classes; absence from more than one class may be reflected in a student’s grade. They should also be prepared to actively participate in class. No laptops will be permitted in the classroom except for those of students who are making presentations.

Student evaluation will be based on a variety of inputs as outlined in the box below. There will be **no final exam**.

Activity	Percentage of Grade	Date due
<ul style="list-style-type: none"> ➤ <i>General class participation:</i> The class participation grade involves several components: <ul style="list-style-type: none"> • Being part of the general class conversation; the course schedule indicates specific questions that will be addressed in class; students should be prepared to discuss them and to be cold-called. • Representing the views and interests of one country throughout the course; students will chose/be assigned to a country early in the term. • Participating in class debates. 	20%	NA
<ul style="list-style-type: none"> ➤ One memo, 3 pages, single-spaced, to the leader of the 		

country you will be representing throughout the course on the energy situation in the country.	15%	September 17
<ul style="list-style-type: none"> ➤ One policy memo, 3-4 pages, single-spaced in length, <u>either</u>: <ul style="list-style-type: none"> • To the leader of a country (either Afghanistan, Peru, or Uganda) facing new energy finds and wanting to avoid the resource curse; OR • To the U.S. national security advisor on the implications of China’s quest for energy resources abroad and implications for U.S. policy. 	15%	September 26 or October 22
➤ 20-25 page <i>Regional</i> Energy and Security Strategy for a region related to the country each student is representing throughout the course; this will be written by a group where all members will get the same grade.	30%	November 7
➤ Construction of an Energy Security Index. Students will be paired with one or two other students to construct a proposal (with some test piloting of it) for an index measuring national energy security.	20%	November 28
* All papers should be single spaced, use Times New Roman 12 font, and have one inch margins.		

Class Schedule

Please note that the schedule below may change in small respects – in terms of the sequence and possibly timing of certain classes – to accommodate guest speakers or exciting opportunities as they arise. We will do our best to give you plenty of advance notice.

Class	Date	Topic	Main Questions
UNIT 1: ENERGY AS A DETERMINANT OF THE INTERNATIONAL SYSTEM			
1	Wednesday September 5	Shopping Day: Introduction; Overview of Course and Requirements	What is the geopolitics of energy? How has the idea of energy security evolved?
2	Friday September 7	Energy as a Determinant of the International System	How have energy transitions transpired in the past? What is a strategic commodity? How has energy, as a strategic commodity shaped the international system in the past? To what extent has energy determined alliances, the outcomes of wars, the pace of development, and the rise and fall of empires?

3	Monday September 10	The Global Energy Landscape: Demand, Supply, and Price	What are the factors influencing global energy markets and the major trends on today's energy landscape? What factors are driving the fundamentals (demand, supply, and price)? What are the projections for demand and supply – what challenges do they portend? To what extent do supply and demand depend on geopolitical factors? What is the role of governments in moving away from oil and gas toward alternative energies today and in the future?
	Wednesday September 12	NO CLASS	<i>Make up class to be scheduled according to guest speaker's schedule</i>
UNIT 2: ENERGY AS A MEANS OF NATIONAL POWER: Using Energy to Project Power			
<i>September 17: Short Policy Memo Due on Your Country's Energy Situation</i>			
4	Monday September 17	1970 Power Shift: America Relinquishes the Oil Weapon to OPEC	How, in the past, did the United States use its status as a major global producer to advance its national security objectives? What changed in 1970 and how did this curtail U.S. power? What was behind the formation of OPEC and what allowed it to exert such influence in the crises of 1973 and 1979?
5	Wednesday September 19	New Energy Innovation: Government and the Private Sector <i>Guest Speaker: Andy Karsner, President of Manifest Energy, former Assistant Secretary for Renewable Energy</i>	What are the prospects for renewable energy today? What are the U.S. and other governments doing to encourage the move away from a fossil fuel dependent economy? What is the role of the private sector?
6	Monday September 24	GROUP EXERCISE OPEC Today: Waxing or Waning?	To what extent does the formation of cartels produce strategic advantage to its participants? How has OPEC wielded political influence over the decades – and are the constraints on OPEC internal or external? Is OPEC still a force to be

			reckoned with today? Should consumer countries hope for OPEC's collapse?
September 26: Short Policy Memo Due on the Resource Curse: Upload to Course Page			
7	Wednesday September 26	POLICY MEMO The Resource Curse	What are the components of the alleged "resource curse? How does the discovery and exploitation of resources affect the development of a country's political institutions? Is the resource curse inevitable? What policy advice would you give President Yoweri Museveni of Uganda, President Hamid Karzai of Afghanistan, or President Ollanta Humala of Peru – leaders of three countries who recently discovered potentially significant amounts of natural resources?
8	Monday October 1	The Arab Revolutions and their Implications for Energy	How have the political changes in the Arab world affected energy markets so far? What are reasonable expectations for the future? Should the world be more confident of the ability of the Middle East to help meet global energy needs – or more skeptical? What are the mechanisms through which the politics of the Arab revolutions will affect energy in the months and years ahead?
9	Wednesday October 3	Russia and Europe <i>Guest Speaker: Daniel Freifeld, former Senior Advisor for Energy to Secretary of State Hillary Clinton, current President of Permian Inc.</i>	What is the energy relationship between Russia and Europe? Is European reliance on Russian natural gas a threat to European prosperity or security? If so, what could be done to mitigate this threat and what is the role of diplomacy in realizing such outcomes?
	Monday October 8	NO CLASS	Columbus Day Holiday

10	<u>Tuesday</u> <u>October 9</u>	MAKE UP CLASS from September 12 CASE EXERCISE Natural Gas Finds in the Eastern Mediterranean	How significant are the recent gas findings in the Eastern Mediterranean? What opportunities do they provide Israel to meet economic needs and advance other non-economic interests in the region? What obstacles must be overcome to realize these benefits? Do other situations of contested resources provide suitable models?
11	Wednesday October 10	Consumer Leverage and the Use of Sanctions: The Case of Iran	What sort of leverage do consumers of energy have? Under what circumstances have consumer countries been able to use energy as a weapon? When are sanctions most likely to succeed? What has been the cost of sanctions on energy producing states? How are current U.S., UN, and international sanctions on Iran affecting energy interests?
12	Monday October 15	<i>CASE STUDY</i> The Geopolitical Implications of Iraq's National Energy Strategy	How can Iraq translate its energy wealth into domestic prosperity and influence in the region? What is the energy strategy of Iraq, a strategic producer country, and what are the geopolitical implications of this strategy?
UNIT 3: ENERGY AS AN END TO FOREIGN POLICY AND SECURITY STRATEGIES: The Use of Power to Protect and Secure Energy			
13	Wednesday October 17	<i>CLASS DEBATE</i> China's Rise and Thirst for Energy: Is great power conflict inevitable?	Proposed Motion: <i>China's rise and thirst for energy will eventually lead to international military conflict.</i>
October 22: Short Policy Memo Due on China in Africa: Upload to Course Page			
14	Monday October 22	<i>CASE EXERCISE and POLICY MEMO</i> Resource Mercantilism; China in Africa	What forms does energy mercantilism take? How has China sought to secure the energy it needs to develop? What are the implications of China's strategy for Africa? For the United States? What new power alliances could or are emerging as a result of the trend toward energy mercantilism?

15	Wednesday October 24	<i>CASE EXERCISE</i> The Geopolitical Implications of Pakistan’s National Energy Strategy	What is the link between energy and security in Pakistan? What strategy should Pakistan adopt to address its immediate and long term energy needs? What choices does Pakistan have in seeking to address its energy challenges – and what are the various geopolitical implications of these choices?
October 26: Harvard/BP Energy Symposium			
16	Monday October 29	<i>CLASS DEBATE</i> The United States in the Gulf	Proposed Motion: <i>The United States should cease fighting wars for oil in the Persian Gulf and withdraw from the region.</i>
17	Wednesday October 31	The U.S. Military and Energy	How much energy – and what kind – does the United States military use? How does this reliance on energy shape the U.S. footprint overseas, combat operations, and other military realities? What sorts of innovations are being pursued to lessen this dependence and what would be their consequences?
UNIT 4: ALTERNATIVE, RENEWABLE, AND NEW ENERGY AND GEOPOLITICS			
18	Monday November 5	Geopolitical Consequences of Moving Toward a Post-Petroleum World	What would the world look like if the United States and other great powers were successful in reducing their dependence on fossil fuels by 50% by 2025? Would it bring about positive political change elsewhere in the world? Would the United States be more secure as a result of being more energy independent?
November 7: Regional Strategies Due			
19	Wednesday November 7	Geopolitical Consequences of a Shift to Shale Gas	What are the prospects for natural gas in the coming years? To what extent has shale gas been a “game changer”? What are the environmental and political obstacles to it reaching this status? What

			are the geopolitical consequences of shale gas? Does it make a Gas-OPEC more or less likely?
	Monday November 12	NO CLASS	Veterans Day Holiday
20	Wednesday November 14	Presentation of Regional Strategies	<i>Teams will be selected at random for presentation of regional strategies</i>
21	Monday November 19	Presentation of Regional Strategies	<i>Teams will be selected at random for presentation of regional strategies</i>
November 21-23: Thanksgiving Holiday			
22	Monday November 26	Geopolitical Consequences of a Shift to Nuclear Power <i>Guest Speaker: Professor Matt Bunn, Director of Managing the Atom, HKS</i>	What would be the geopolitical repercussions if these obstacles were surmounted? Is nuclear power a viable option in the Middle East and North Africa?
November 28: Energy Security Indices Due			
23	Wednesday November 28	<i>CASE STUDY</i> Geopolitical Consequences of Solar Energy: The Case of DESERTEC	What is the potential for solar in solving some of the energy dilemmas of Europe and North Africa? What geopolitical issues come into play when one considers the development and export of solar-powered electricity? Are their similarities and differences than the issues associated with oil and gas? What obstacles need to be surmounted for DESERTEC to be realized?
24	Monday December 3	Presentation of Energy Security Indices	Is it possible to create an energy security index that allows one to measure and rank on a comparative scale the energy security or insecurity of most countries? What would be the elements of such an index and how best to present and weigh them?

25	Wednesday December 5	Wrap Up	
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Required Texts:

- Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power* (Free Press), 2008.
- Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009.
- Carlos Pascual and Evie Zambetakis (eds), *Energy Security: Economics, Politics, Strategies and Implications*, (Washington DC: Brookings), 2010.
- Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011.

Course Packets:

Course packets will be prepared for additional readings. Links will be provided for all required readings available online. When readings are available on line or on the course page, they will not be replicated in a course packet.

There will be copies of the required books and all the non-online reading held on reserve in the HKS Library.

READING LIST

Class 1: Wednesday, September 5:

Shopping Day

Required:

- (2 pages) “From the Editor: Energy Geopolitics in the 21st Century,” *Journal of Energy Security*, April 2012, pp. (http://www.ensec.org/index.php?option=com_content&view=article&id=350:energy-geopolitics-in-the-21st-century&catid=122:fromtheditor&Itemid=389).
- (17 pages) Gal Luft and Anne Korin, “Energy Security: In the Eyes of the Beholder,” in *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, Chapter 1 - pp. 1-17.

UNIT 1: ENERGY AS A DETERMINANT OF THE INTERNATIONAL SYSTEM

Class 2: Friday, September 7:

Energy as a Determinant of the International System

Required:

- *Be sure to have read the required readings from September 5 (above).*
- (67 pages) Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 2008, Chapters 16-19 - pp. 310-370; Excerpt from Chapter 27 - pp. 524-526; Excerpt from Chapter 21 - pp. 404-408.
- (2 pages) Bill Gates and Chad Holliday, "Energy Sector Poised for Innovation – with the Right Spark," *The Washington Post*, 23 April 2010.
<http://www.washingtonpost.com/wp-dyn/content/article/2010/04/22/AR2010042205126.html>

Optional:

- Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 2008, Excerpt from Chapter 8 - pp. 134-138; Chapter 23 - pp. 432-460. (62 pages)
- Yegor Gaidor, *Collapse of an Empire: Lessons for Modern Russia* (Washington DC: Brookings Institution Press), 2007.

Class 3: Monday, September 10:

The Global Energy Landscape: Demand, Supply, and Price

Required:

- (19 pages) Daniel Yergin, "Chapter 9: China's Rise" *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, pp. 189-208.
- (14 pages) Daniel Yergin, "Chapter 11: Is the World Running Out of Oil?" *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, pp. 227-241.
- (20 pages) Daniel Yergin, "Chapter 12: Unconventional," *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, pp. 242-262.

- (8 pages) International Energy Agency, “Executive Summary,” *World Energy Outlook 2011*, OECD, 2011, pp. 39-47. (PDF of whole report on course page)
- (3 pages) Leonard Maugeri, “Global Oil Production is Surging: Implications for Prices, Geopolitics, and the Environment,” *Belfer Center Policy Brief*, June 2012. http://belfercenter.ksg.harvard.edu/publication/22147/global_oil_production_is_surging.html
- (10 page synopsis) David MacKay, *Sustainable Energy – Without the Hot Air*, (Cambridge, UK: UIT Publishers), 2009. <http://www.withouthotair.com/synopsis10.pdf>

Optional:

- (13 pages) Christof Ruehl, “Global Energy After the Crisis,” *Foreign Affairs*, March/April 2010, pp. 63-75. http://www.bp.com/liveassets/bp_internet/trinidad_and_tobago/STAGING/home_assets/christof-ruehl-global-energy-after-crisis.pdf
- (23 pages) Jonas Gratz, “Unconventional Resources: The Shifting Geographies and Geopolitics of Energy,” *Strategic Trends 2012*, (Zurich: Center for Security Studies), 2012, pp. 79-102.
- World Economic Forum, *The Future of Oil: Meeting the Challenges*, Spring 2007, pp. 11-27. (16 pages) <http://www.weforum.org/pdf/ip/energy/EnergyVisionUpdate2007-Spring%20-%20Final.pdf>

UNIT 2: ENERGY AS A MEANS OF NATIONAL POWER: Using Energy to Project Power

Wednesday, September 12: NO CLASS, Make up class on Tuesday October 9 in the evening.

Class 4 and Class 6:

JOINT READINGS for Class 4 AND 6: Monday, September 17 AND Monday, September 24

September 17: 1970 Power Shift: The United States Relinquishes the Oil Weapon to OPEC

September 24: CLASS GAME: Simulating OPEC Today You will be assigned to represent a country in OPEC before the in-class game.

Required:

- (76 pages) Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 2008, Chapter 24 - pp. 461-480; Excerpts from Chapters 25-27 - pp. 498-511; Chapter 29 - pp. 570-594; Chapter 33 - pp. 658-680.

- (3 pages) Gal Luft, “Fifty Years to OPEC: Time to Break the Oil Cartel,” *Journal of Energy Security*, September 2010, (http://www.ensec.org/index.php?option=com_content&view=article&id=263:fifty-years-to-opec-time-to-break-the-oil-cartel&catid=110:energysecuritycontent&Itemid=366).
- (4 pages) Nancy Brune, “50 Years Later: OPEC’s Continuing Threat to American Security,” *Journal of Energy Security*, September 2010, pp. (http://www.ensec.org/index.php?option=com_content&view=article&id=263:fifty-years-to-opec-time-to-break-the-oil-cartel&catid=110:energysecuritycontent&Itemid=366)
- (12 pages) Amy Myers Jaffe, “Chapter 6: OPEC: An Anatomy of a Cartel,” in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Greenwood Publishing Group), 2009, pp. 78-90.
- (31 pages) Edward L. Morse and Amy Myers Jaffe, “OPEC in Confrontation with Globalization,” in Jan H. Kalicki and David L. Goldwyn (eds.), *Energy and Security: Toward a New Foreign Policy Strategy* (John Hopkins University Press, 2005), Chapter 3 - pp. 65-96.
- (5 pages) Alvaro Silva-Calderon, “Commentary on Part I,” in Jan H. Kalicki and David L. Goldwyn (eds.), *Energy and Security: Toward a New Foreign Policy Strategy* (John Hopkins University Press, 2005), pp. 117-122.

Optional:

- (43 pages) Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 2008, pp. 726-749.
- (63 pages) Anna Rubino, *Queen of the Oil Club: The Intrepid Wanda Jablonski and the Power of Information* (Boston: Beacon Press), 2008, pp. 135-198.

Class 5: Wednesday September 19

New Energy Innovation: Government and the Private Sector

Guest Speaker: *Andy Karsner, President of Manifest Energy, former Assistant Secretary for Renewable Energy*

- (11 pages) Jeffrey Ball, “Tough Love for Renewable Energy: Making Wind and Solar Power Affordable,” *Foreign Affairs*, May/June 2012, pp. 122-133. (<http://bx.businessweek.com/global-climate->

[change/view?url=http%3A%2F%2Fwww.ihavenet.com%2FWorld-Tough-Love-for-Renewable-Energy.html](http://www.ihavenet.com/World-Tough-Love-for-Renewable-Energy.html)).

- (9 pages) David Victor and Kassia Yanosek, “The Crisis in Clean Energy,” *Foreign Affairs*, July/August 2011, pp. 112-120.
(http://irps.ucsd.edu/dgvictor/publications/Faculty_Victor_Article_2011_The%20Crisis%20in%20Clean%20Energy_Foreign%20Affairs.pdf).

Class 6: Wednesday, September 24: SEE ABOVE (readings listed with September 17)

Class 7: Wednesday, September 26

POLICY MEMO: The Resource Curse

ASSIGNMENT FOR THE RESOURCE CURSE MEMO: BY 9AM THE DAY OF CLASS, turn in a three page policy memo addressed directly to either:

1. Afghan President Hamid Karzai
2. Ugandan President Yoweri Museveni
3. Peruvian President Ollanta Humala

about the risks his country faces in developing new energy finds and how it might avoid or mitigate them. You can take the role of his chief domestic advisor. NOTE: You will need to go beyond the material in the syllabus and do some additional research to both identify the specifics of your country’s case and to devise sensible prescriptions. You should post your memo to the course page and leave a hard copy in the box outside of Professor O’Sullivan’s office at L329.

Required:

- Watch: “Uganda oil fraught with promises and perils,” Al Jazeera English, 5 July 2009, <http://www.youtube.com/watch?v=aYV-BG9ha9k>
- Watch: PBS News Hour, “Valuable Mineral Resources Found in Afghanistan,” 14 June 2010, <http://www.youtube.com/watch?v=cQNQfaTNK14>
- Watch: In Focus, “Peru’s Petroleum Play,” http://www.youtube.com/watch?v=Opg7KsZUEmk&playnext=1&list=PLBCC2E10AC59021A3&feature=results_video
- (10 pages) Paul Stevens and Evelyn Dietsche, “Resource Curse: An Analysis of Causes, Experiences and Possible Ways Forward,” *Energy Policy* 2008.
<http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S030142150700434X>

- (23 pages) Paul Segal, “How to Spend It: Resource Wealth and the Distribution of Resources Rents,” *Oxford Institute for Energy Studies*, May 2012, pp. 1-23. http://www.oxfordenergy.org/wpcms/wp-content/uploads/2012/05/SP_25.pdf

Optional:

- (25 pages) Michael Ross, “The Political Economy of the Resource Curse,” *World Politics*, vol. 51, No. 2, January 1999, pp. 297-322. <http://www.jstor.org.ezp-prod1.hul.harvard.edu/stable/pdfplus/25054077.pdf>
- (23 pages) Charles McPherson, “Governance, Transparency, and Sustainable Development,” in Jan H. Kalicki and David L. Goldwyn (eds.), *Energy and Security: Toward a New Foreign Policy Strategy* (John Hopkins University Press, 2005), pp. 461-484.
- (6 pages) Michael L. Ross, “Will oil drown the Arab spring?” *Foreign Affairs*, Sep/Oct 2011, Vol. 90 Issue 5, pp. 2-7. <http://www.foreignaffairs.com/articles/68200/michael-l-ross/will-oil-drown-the-arab-spring>

Class 8: Monday, October 1:

The Arab Revolutions and Their Implications for Energy

- (6 pages) Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, Excerpt of Chapter 14 - pp. 291-296 (“The Social Foundations” heading until “Iraq’s Potential” heading).
- (6 pages) Paul D. Miller, “The Fading Arab Oil Empire,” *The National Interest*, July/August 2012, pp. 38-43.
- (7 pages) Robert Mabro, Helima Croft, Amrita Sen, Hakim Darbouche, and John Hamilton, “Political Events in the Middle East and their Impact on Energy,” *Oxford Energy Forum*, May 2011, pp. 3-11. <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2011/05/OEF-84.pdf>
- (2 pages) Edward L. Morse, “Oil and Unrest: What Uprising in the Arab World Means for Energy Supplies,” *Foreign Affairs*, 8 March 2011. <http://www.foreignaffairs.com/print/67490>
- (11 pages) Robert McNally and Michael Levi, “A Crude Predicament: The Era of Volatile Oil Prices,” *Foreign Affairs*, July/August 2011, pp. 100-111. <http://republicans.energycommerce.house.gov/Media/file/Hearings/Energy/20120307/HH RG-112-IF03-WState-McNallyR-20120307-SD001.pdf>
- (11 pages) F. Gregory Gause, *Saudi Arabia in the New Middle East*, Council on Foreign

Relations Special Report No. 63, December 2011, pp. 3-14.

- (4 pages) Daniel Fink, “Turning Off the Egyptian Gas Spigot: Implications for Israel,” *Journal of Energy Security*, May 2011, pp. http://www.ensec.org/index.php?option=com_content&view=article&id=313:turning-off-the-egyptian-gas-spigot-implications-for-israel&catid=116:content0411&Itemid=375).
- (6 pages) Bassam Fattouh and Laura al-Katiri, *Energy Subsidies in the Arab World*, Arab Human Development Report, 2012, pp. 7-10, 51-53. <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/UNDP-EE-AHDR-Energy-Subsidies-2012-Final.pdf>

Class 9: Thursday, October 3:

Russia and Europe

GUEST SPEAKER: Daniel Freifeld, former Senior Advisor for Energy to Secretary of State Hillary Clinton, current President of Permian Inc.

Required:

- (14 pages) James Henderson and Patrick Heather, “Lessons from the February 2012 European Gas “Crisis,” *Oxford Institute for Energy Studies: Energy Comment*, April 2012, pp. 1-14. <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2012/04/Lessons-from-the-February-2012-gas-crisis.pdf>
- (17 pages) Ariel Cohen, “Russia: The Flawed Energy Superpower,” in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century*, (Greenwood Publishing Group, 2009), Chapter 7 - pp. 91-108.
- (18 pages) Ariel Cohen, “Energy Security in the Caspian Basin,” in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century*, (Greenwood Publishing Group, 2009), Chapter 8 - pp. 109-127.
- (15 pages) Kevin Rosner, “The European Union: On Energy, Disunity,” in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century*, (Greenwood Publishing Group, 2009), Chapter 11 - pp. 160-175.
- (6 pages) Andreas Goldthau, “Rhetoric versus reality: Russian threats to European energy supply” *Energy Policy*, Volume 36, Issue 2, February 2008, Pages 686-692. <http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0301421507004430>

Optional:

- (11 pages) Katinka Barysch, “Should the Nabucco pipeline project be shelved?” *Centre for European Reform Policy Brief*, 5 May 2010. http://www.cer.org.uk/pdf/pb_Nabucco_5may10.pdf
- (9 pages) Robert G. Bell, “NATO’s Grapple with Energy Security,” in Gal Luft and Anne Korin (eds.) *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, pp. 61-70.

Monday, October 8: NO CLASS Columbus Day Holiday

Class 10: TUESDAY, October 9: MAKE UP CLASS FROM SEPTEMBER 12

CASE EXERCISE

Natural Gas Finds in the Eastern Mediterranean

- (3 pages) Paul Salem, “Eastern Mediterranean Gas: Factor for Stability or Conflict?” *Al-Hayat*, March 22, 2012. <http://carnegieendowment.org/2012/03/22/eastern-mediterranean-gas-factor-for-stability-or-conflict/a4ia>
- (32 pages), CASE: Meghan O’Sullivan, Nikhil Gahlawat, Nathan Haft, and Julian Lopez, “New Finds of Energy in the Eastern Mediterranean: Cause for Conflict or Cooperation?” (Geopolitics of Energy Case #5), *Harvard Kennedy School of Government*, April 2012, (on course page). Read case and think about how what you would propose as a solution.
- (6 pages) Jeffrey Mankoff, *Resource Rivalry in the Eastern Mediterranean: The View from Washington*, GMF Policy Brief, 11 June 2012, pp. 1-11. http://www.gmfus.org/wp-content/blogs.dir/1/files_mf/1339093526Mankoff_ResourceRivalry_Jun12.pdf
- (11 pages) Simon Henderson, *Energy Discoveries in the Eastern Mediterranean: Source for Cooperation or Fuel for Tension? The Case of Israel*, GMF Policy Brief, 11 June 2012, pp. 1-11. http://www.gmfus.org/wp-content/blogs.dir/1/files_mf/1339083541Henderson_EnergyDiscoveries_Jun12.pdf
- (6 pages) Mehmet Ögütçü, *Rivalry in the Eastern Mediterranean: The Turkish Dimension*, GMF Policy Brief, 11 June 2012, pp. 1-6. http://www.gmfus.org/wp-content/blogs.dir/1/files_mf/1339171647Ogutcu_EasternMedRivalry_Jun12.pdf

Optional:

- (22 pages) “Aphrodite’s Gift: Can Cypriot Gas Power a new Dialogue?” *International Crisis Group Europe Report No. 216*, 2 April 2012, pp. 1-22. [http://www.crisisgroup.org/~media/Files/europe/turkey-cyprus/cyprus/216-aphrodites-gift-can-cypriot-gas-power-a-new-dialogue.pdf](http://www.crisisgroup.org/~/media/Files/europe/turkey-cyprus/cyprus/216-aphrodites-gift-can-cypriot-gas-power-a-new-dialogue.pdf)

- Gal Luft, “Hizballah Takes Aim at Israel’s natural gas Discovery,” *Journal of Energy Security*, 26 July 2010, pp. (PAGES AND LINK CAN BE FOUND ON LINE).

Class 11: Wednesday, October 10:

Consumer Leverage and the Use of Sanctions: The Case of Iran

Required:

- (8 pages) Meghan L. O’Sullivan, *Shrewd Sanctions: Statecraft and State Sponsors of Terrorism* (Brookings Institution Press), 2003 Excerpt from Chapter 2 - pp. 24-32.
- (12 pages) Daniel Drezner, “Sanctions Sometimes Smart: Targeted Sanctions in Theory and Practice,” *International Studies Review*, Vol.13, Issue 1, 2011, pp. 96-108.
- (12 pages) Ray Takeyh, “Introduction: What Do We Know?” *Iran: The Nuclear Challenge*, Council on Foreign Relations, June 2012, pp. 1-12.
(<http://www.cfr.org/iran/iran-nuclear-challenge/p28330?co=C040001&excerpt=1>)
- (7 pages) Meghan L. O’Sullivan, “The Role and Potential of Sanctions,” *Iran: The Nuclear Challenge*, Council on Foreign Relations, June 2012, pp. 13-20.
- (6 pages) Mehmet Kinaci, “Tightening Oil Sanctions on Iran,” *Journal of Energy Security*, 7 August 2012, pp.
(http://www.ensec.org/index.php?option=com_content&view=article&id=372:tightening-oil-sanctions-on-iran&catid=128:issue-content&Itemid=402).
- (8 pages) Robert McNally, “Managing Oil Market Disruption in a Confrontation with Iran,” *Council on Foreign Relations Energy Brief*, January 2012, pp. 1-8.
<http://www.cfr.org/iran/managing-oil-market-disruption-confrontation-iran/p27171>
- (16 pages) Suzanne Maloney, “Sanctioning Iran: If Only It Were So Simple,” *The Washington Quarterly*, January 2010, pp. 131-147. (16 pages)
http://www.brookings.edu/~media/Files/rc/articles/2010/01_iran_sanctions_maloney/01_iran_sanctions_maloney.pdf
- (1 page) Johnny West, “Oil Sanctions Against the Assads in Syria Can Work,” *The Huffington Post*, 1 August 2011. http://www.huffingtonpost.co.uk/johnny-west/oil-sanctions-against-the_b_914209.html

Optional:

- CFR Backgrounder, “The Lengthening List of Iran Sanctions,” 31 July 2012 (or update). (4 pages) <http://www.cfr.org/iran/lengthening-list-iran-sanctions/p20258>

- Meghan L. O’Sullivan, *Shrewd Sanctions: Statecraft and State Sponsors of Terrorism* (Brookings Institution Press), 2003.
 - Chapter 3: “Influencing Iran,” pp. 45 -97.
 - Chapter 5: “Limiting Libya,” pp. 173 -229.
 - Chapter 6: “Sanctioning Sudan,” pp. 233 -279.
- Kenneth Katzman, *Iran Sanctions*, Congressional Research Service, 16 July 2012. <http://www.fas.org/sgp/crs/mideast/RS20871.pdf>

Class 12: Monday, October 15:

CASE STUDY: The Geopolitical Implications of Iraq’s National Energy Strategy

Required:

- (3 pages) Nayla Razzouk and Anthony DiPaola, “Iraq Oil Output Beating Iran Ends Saddam Legacy, *Bloomberg News*, 13 May 2012. <http://www.bloomberg.com/news/2012-05-13/iraq-oil-output-beating-iran-ends-saddam-legacy-energy-markets.html>
- (38 pages) CASE Meghan L. O’Sullivan, “Iraq: Translating Underground Wealth Into Power and Prosperity” (Geopolitics of Energy Case #1), *Harvard Kennedy School of Government*, 2011, (on course page). Read case and think about what you would recommend.
- (3 pages) Robert Burns, “U.S. Points to Oil as Key to Iraq’s Postwar Future” *The Associated Press*, 27 August 2010. http://seattletimes.nwsourc.com/html/politics/2012740017_apususraoail.html?syndication=rss
- (4 pages) Sabri Zire al-Saadi, “Growing Oil Power Reshaping Iraq’s Future,” *Middle East Economic Survey*, Vol. LIII, No. 32, 9 August 2010.
- (3 pages) Ambassador Richard Morningstar, *Remarks delivered at CERA Week 2011*, Houston, Texas, 8 March 2011. <http://www.state.gov/s/eee/rmk/158872.htm>

Optional:

- (54 pages) Robert Ebel, *Geopolitics and Energy in Iraq: Where Politics Rule*, CSIS Report, 5 August 2010, pp. 1-54. http://csis.org/files/publication/I00730_Ebel_IraqGeopolitics_Web.pdf

UNIT 3: ENERGY AS AN END TO FOREIGN POLICY AND SECURITY

STRATEGIES: The Use of Power to Protect and Secure Energy

Class 13: Wednesday, October 17:

CLASS DEBATE: China's Rise and Thirst for Energy: Is great power conflict inevitable?

Proposed Motion: *China's rise and thirst for energy will eventually lead to international military conflict.*

Required:

- (11 pages) Christopher J. Fettweis, "No Blood for Oil: Why Resource Wars Are Obsolete," in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, Chapter 5 - pp. 66-77.
- (21 pages) Michael Klare, "There Will Be Blood: Political Violence, Regional Warfare, and the Risk of Great Power Conflict," in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, Chapter 4 - pp. 44-65.
- (4 pages) Henry Philippons, "Fueling China's Maritime Modernization: The Need to Guarantee Energy Security," *Journal of Energy Security*, December 2011, pp. http://www.ensec.org/index.php?option=com_content&view=article&id=332:fueling-chinas-maritime-modernization-the-need-to-guarantee-energy-security&catid=121:contentenergysecurity1111&Itemid=386.
- (34 pages) "Stirring Up the South China Sea: Regional Responses," *International Crisis Group Asia Report No. 229*, July 2012, pp. 1-34. <http://www.crisisgroup.org/~media/Files/asia/north-east-asia/229-stirring-up-the-south-china-sea-ii-regional-responses>
- (7 pages) Robert Kaplan, "The South China Sea is the Future of Conflict," *Foreign Policy*, September/October 2011, pp. 78-85. http://www.foreignpolicy.com/articles/2011/08/15/the_south_china_sea_is_the_future_of_conflict
- (1 page) Daniel Yergin, "China and America Need Not be Energy Rivals," *Financial Times*, 21 May 2007. <http://www.brookings.edu/research/opinions/2007/05/20globaleconomics-yergin>

Class 14: Monday, October 22:

POLICY MEMO and CASE: Resource Mercantilism: China in Africa

ASSIGNMENT FOR STUDENTS WHO CHOOSE IMPLICATIONS OF CHINA'S QUEST FOR ENERGY MEMO: BY 9AM THE DAY OF CLASS, turn in a three page policy

memo to addressed directly to U.S. National Security Advisor Tom Donilon about China's national energy strategy in Africa and what implications it has for the United States. You should take the role of Senior Director for African Affairs at the National Security Council. You should post your memo to the course page and leave a hard copy in the box outside of Professor O'Sullivan's office at L329.

Required:

- CASE (2 pages) Meghan L. O'Sullivan, "How to Respond to Chinese Energy Activities in Africa," *Geopolitics of Energy Case #5*, April 2012. (Posted on course page.) Read the case and be prepared to discuss the questions posed in detail in class.
- (3 pages) "Africa and China: This house [The Economist] believes that China's growing involvement in Africa is to be welcomed", *The Economist debates*, 27 August 2011. (Read opening remarks from The Economist's moderator, professor Calestous Juma and professor George Ayittey) <http://www.economist.com/debate/overview/165>
- (24 pages) Bo Kong, *China's International Petroleum Policy* (Praeger: Santa Barbara, 2010), Chapter 5 - pp. 116-140.
- (9 pages) Don Yamamoto, "Assessing China's Role and Influence in Africa," *Testimony Before the House Foreign Affairs Committee Subcommittee on Africa, Global Health, and Human Rights*, 29 March 2012. <http://foreignaffairs.house.gov/112/HHRG-112-FA16-WState-YamamotoD-20120329.pdf>
- (9 pages) Guy C.K Leung, "China's energy security: Perception and reality," *Energy Policy*, 2011, pp. 1330-1337. <http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0301421510008864>
- (26 pages) David L. Goldwyn, "Squaring the U.S.-Africa-China Energy Triangle: The Path from Competition to Cooperation," in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, Chapter 15 - pp. 233-249.
- (2 pages) Matthew Acocella, "What an energy-hogging China may mean for the U.S. and global politics," *Foreign Policy blog*, 28 July 2010. http://ricks.foreignpolicy.com/posts/2010/07/28/what_an_energy_hogging_china_may_mean_for_the_us_and_global_politics

Optional:

- (8 pages) David Shinn, "Assessing China's Role and Influence in Africa," *Testimony Before the House Foreign Affairs Committee Subcommittee on Africa, Global Health, and Human Rights*, 29 March 2012. <http://foreignaffairs.house.gov/112/HHRG-112-FA16-WState-ShinnD-20120329.pdf>

- (59 pages) Alex Vines, Lillian Wong, Markus Weimer and Indira Campos, *Thirst for African Oil: Asian National Oil Companies in Nigeria and Angola*, Chatham House Report, August 2009. http://www.chathamhouse.org.uk/files/14524_r0809_africanoil.pdf
- (27 pages) Sabrina Howell, “Jia You! (Add Oil!): Chinese Energy Security Strategy,” in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, pp. 191-218.

Class 15: Wednesday, October 24:

CASE STUDY: The Geopolitical Implications of Pakistan’s National Energy Strategy

Required:

- (2 pages) “Lights Out: Another Threat to a Fragile Country’s Stability” *The Economist*, 8 October 2011. <http://www.economist.com/node/21531495>
- (2 pages) “Power Politics: Pakistan’s energy crisis,” *The Economist (Blog)*, 21 May 2012. <http://www.economist.com/blogs/banyan/2012/05/pakistan%E2%80%99s-energy-crisis>
- (2 pages) “Pakistan energy shortfall fuels row over coal power plants,” *The Guardian*, 29 May 2012. <http://www.guardian.co.uk/global-development/2012/may/29/pakistan-energy-shortfall-coal-power-plants?INTCMP=ILCNETTXT3487>
- (3 pages) “No end in sight for Pakistan’s energy crisis,” *International Herald Tribune*, 8 August 2012. <http://tribune.com.pk/story/419175/no-end-in-sight-for-pakistans-energy-crisis/>
- (2 pages) “Energy Starved Pakistan Eyes Solar Power,” Agence France Press, 26 March 2012. http://www.google.com/hostednews/afp/article/ALEqM5iQqyeNGf_uL2m4W-XHuCkHeBfBuw?docId=CNG.e90177df7bc765b1d1b36a47bff406c5.411
- (19 pages) Elizabeth Mills, *Pakistan’s Energy Crisis*, U.S. Institute of Peace, June 2012, pp. 4-23. http://www.usip.org/files/resources/PW79_Pakistans_Energy_Crisis.pdf
- CASE (10 pages) Francisco Aguilar, “Meeting Pakistan’s Energy Needs,” Case Prepared for IGA 412, *Harvard Kennedy School of Government*, October 2011. (10 pages). Read and examine the accompanying spread sheet. Think about possible solutions to this case for you to propose/discuss in small groups in class. (Material on course page.)

Optional:

- (28 pages) Robert Hathaway, Bhumika Muchhala, and Michael Kugelman, *Fueling the Future: Meeting Pakistan’s Energy Needs in the 21st Century*, Woodrow Wilson Center,

2007, pp. 17-34 and pp. 93-104.

http://wilsoncenter.org/topics/pubs/Asia_FuelingtheFuture_rptmain.pdf

- Haider Ali Hussein Mullick, “The Iran-Pakistan-India Pipeline: Economics, Geopolitics, and Security, *Pakistan Security Research Unit Brief No. 36*, 11 June 2008. (9 pages)
<http://haidermullick.com/Documents/Mullick%20PSRU%20IPI%20Brief+36.pdf>
- Ariel Cohen, Lisa Curtis, and Owen Graham “The Proposed Iran-Pakistan-India Gas Pipeline: An Unacceptable Risk to Regional Security,” *Heritage Foundation Backgrounder*, No: 2139, May 2008. (15 pages)
<http://www.heritage.org/Research/Reports/2008/05/The-Proposed-Iran-Pakistan-India-Gas-Pipeline-An-Unacceptable-Risk-to-Regional-Security>

Class 16: Monday, October 29:

CLASS DEBATE: The United States in the Gulf

Proposed Motion: *The United States should cease fighting wars for oil in the Persian Gulf and withdraw from the region.*

Required:

- (12 pages) Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, chapter 37, “Crisis in the Gulf,” Chapter 37 - pp. 750-762.
- (4 pages) Steve Coll, *Private Empire: Exxon Mobil and American Power*, (London: Penguin Books) 2012, First 4 pages of Chapter 11 - pp. 227-230.
- (12 pages) Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, First 12 pages from Chapter 7 - pp. 141-153.
- (4 pages) Steven Mufson, “A Crude Case for War?” *The Washington Post*, 16 March 2008. http://www.washingtonpost.com/wp-dyn/content/article/2008/03/14/AR2008031403677_pf.html
- (13 pages) Michael O’Hanlon, “How Much Does the United States Spend Protecting Persian Gulf Oil?,” in Carlos Pascual and Evie Zambetakis (eds), *Energy Security: Economics, Politics, Strategies and Implications*, (Washington DC: Brookings, 2010), Chapter 3 - pp. 59-72.
- (11 pages) Michael T. Klare. "Petroleum Anxiety and militarization," in Daniel Moran and James Russell (eds.), *Energy Security and Global Politics: the Militarization of Resource Management*, (New York: Routledge, 2009), Excerpt from Chapter 2 - pp. 46-57.

- (15 pages) Lawrence Korb and Ian Moss, *Moving Beyond the Carter Doctrine: Rethinking the U.S. Military Presence in the Persian Gulf*, The Century Foundation, 2008, pp. 3-17. <http://tcf.org/events/pdfs/ev232/korb.pdf++atfield++file>
- (3 pages) Jeremy Kahn, "Crude Reality," *The Boston Globe*, 13 February 2011. http://www.boston.com/bostonglobe/ideas/articles/2011/02/13/crude_reality/
- (3 pages) Anna Nadgrodkiewiz, "Review: America's Appetite for Oil: The Past, Present, and a Bumpy Road Ahead," *The Review of Politics*, Vol. 68, No. 3, pp. 538-541.
- (2 pages) Rachel Bronson, "Review: America's Oil Wars," *International Journal of Middle East Studies*, Vol. 38, No. 4 (Nov., 2006), pp. 617-618.

Class 17: Wednesday, October 31:

The U.S. Military and Energy

Required:

- (3 pages) Keith Johnson, "Pentagon Presents its First Energy Plan," *The Wall Street Journal*, 15 June 2011. <http://online.wsj.com/article/SB10001424052702304665904576385843719478096.html>
- (2 pages) David Baker, "Solar, Wind Power Get Pentagon Boost," *San Francisco Chronicle*, 6 August 2012. <http://www.sfgate.com/business/article/Solar-wind-power-get-Pentagon-boost-3767317.php>
- (1 page) Donna Cassata, "Senate Panel Reigns in Pentagon on Clean Energy," *Bloomberg News*, 25 May 2012. <http://www.businessweek.com/ap/2012-05/D9UVUPG00.htm>
- (12 pages) *Energy for the Warfighter: Operational Energy Strategy*, Department of Defense, May 2011, pp.1-12. http://energy.defense.gov/OES_report_to_congress.pdf
- (8 pages) Jerry Warner and Peter Singer, *Fueling the "Balance" A Defense Energy Strategy Primer*, The Brookings Institution, 25 August 2009, pp. 1-8. http://www.washingtonexaminer.com/politics/Fueling-our-security_-The-need-for-a-defense-energy-strategy-8149899-54612187.html
- (14 pages) Center for Naval Analyses Military Advisory Board, *Powering America's Economy: Energy Innovation at the Crossroads of National Security Challenges*, July 2010, pp. 9-23. <http://www.cna.org/sites/default/files/research/WEB%2007%2027%2010%20MAB%20Powering%20America%27s%20Economy.pdf>

Optional:

- Center for Naval Analyses Military Advisory Board, *Powering America's Defense: Energy and the Risks to National Security*, May 2009, pp. 7-15 and 25-49. (32 pages) <http://www.cna.org/sites/default/files/Powering%20Americas%20Defense.pdf>
- Eric Thompson, "Army assessing lighter, contoured batteries for dismounted soldiers," CERDEC Public Affairs, 26 July 2010. (3 pages) <http://www.army.mil/-news/2010/07/26/42831-army-assessing-lighter-contoured-batteries-for-dismounted-soldiers/>
- Debra Bathmann, "Army deploys innovative battery-recharging kit," CERDEC Public Affairs, 2 August 2010. (2 pages) <http://www.army.mil/-news/2010/08/02/43176-army-deploys-innovative-battery-recharging-kit/?ref=news-environment-title13>

UNIT 4: ALTERNATIVE, RENEWABLE, AND NEW ENERGY AND GEOPOLITICS

Class 18: Monday, November 5:

Geopolitical Consequences of Moving toward a Post-Petroleum World

Required:

- (9 pages) Thomas L. Friedman, "The First Law of Petropolitics," *Foreign Policy*, May/June 2006, pp. 28-37. http://www.relooney.info/00_New_798.pdf
- (2 pages) Fareed Zakaria, "Mile by Mile, Into the Oil Trap," *The Washington Post*, 22 August 2005. <http://www.washingtonpost.com/wp-dyn/content/article/2005/08/22/AR2005082201114.html>
- (12 pages) Amory B. Lovins, "A Farewell to Fossil Fuels: Answering the Energy Challenge," *Foreign Affairs*, March/April 2012, pp. 134-146. http://www.rmi.org/Knowledge-Center/Library/2012-01_FarewellToFossilFuels
- (10 pages) Gal Luft and Anne Korin, "The Folly of Energy Independence," *The American Interest*, July/August 2012. <http://www.the-american-interest.com/article.cfm?piece=1266>
- (12 pages) Pietro S. Nivola with Erin E.R. Carter, "Making Sense of "Energy Independence," in Carlos Pascual and Evie Zambetakis (eds), *Energy Security: Economics, Politics, Strategies and Implications*, (Washington DC: Brookings, 2010), Chapter 5 - pp. 105-118.

Optional:

- (11 pages) Richard Morse, “Cleaning Up Coal,” *Foreign Affairs*, July/August 2012, pp. 102-113.
- Suzanne Maloney, “Energy Security in the Persian Gulf, Opportunities and Challenges,” in Carlos Pascual and Evie Zambetakis (eds), *Energy Security: Economics, Politics, Strategies and Implications*, (Washington DC: Brookings, 2010), pp. 37-58. (21 pages)

Class 19: Wednesday, November 7:

Geopolitical Consequences of a Shift to Shale Gas

Required:

- (16 pages) Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, Chapter 16, “The Natural Gas Revolution,” pp. 325-341.
- (12 pages) John Deutch, “The Good News About Gas”, *Foreign Affairs* 2011. <http://ezp-prod1.hul.harvard.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=56625795&site=ehost-live&scope=site>
- (2 pages) John Deutch, “Shale gas: Can we safely tap a huge resource?” *The Washington Post*, 18 August 2011. http://www.washingtonpost.com/opinions/shale-gas-can-we-safely-tap-a-huge-resource/2011/08/17/gIQAOFJWOJ_story.html
- “Extracting Natural Gas From Rock”, *New York Times* 2010, (interactive feature illustrating how shale gas is extracted) <http://www.nytimes.com/interactive/2011/02/27/us/fracking.html?ref=us>
- (13 pages) Secretary of Energy Advisory Board, *Shale Gas Production Subcommittee Second Ninety Day Report*, U.S. Department of Energy, 18 November 2011, pp. 1-10, 16-18. http://www.shalegas.energy.gov/resources/111811_final_report.pdf
- (19 pages) Amy Myers Jaffe and Meghan L. O’Sullivan, “The Geopolitics of Natural Gas: Report of Scenarios Workshop,” *The Geopolitics of Energy Project at Harvard*, July 2012, pp. 7-26. <http://belfercenter.ksg.harvard.edu/files/The%20Geopolitics%20of%20Natural%20Gas.pdf>
- (4 pages executive summary) Paul Stevens, “The ‘Shale Gas Revolution’: Hype and Reality,” *The Royal Institute of International Affairs*. http://www.chathamhouse.org/sites/default/files/public/Research/Energy,%20Environment%20and%20Development/r_0910stevens.pdf

- (5 pages) Maximilian Kuhn and Frank Umbach, “The Geoeconomic and Geopolitical Implications of Unconventional Gas in Europe,” *Journal of Energy Security*, August 2011, pp.
http://www.ensec.org/index.php?option=com_content&view=article&id=320:the-geoeconomic-and-geopolitical-implications-of-unconventional-gas-in-europe&catid=118:content&Itemid=376).
- (2 pages) “Russia Gas: Bearish Implications,” *The Economist*, 8 September 2011.

Optional:

- (2 pages) John Deutch, “The U.S. Natural Gas Boom Will Transform the World,” *The Washington Post (Op ed)*, 15 August 2012.
http://belfercenter.ksg.harvard.edu/publication/22247/us_naturalgas_boom_will_transform_the_world.html
- (16 pages) U.S. Energy Information Administration, “Chapter 3: Natural Gas,” *International Energy Outlook 2010*, pp. 41-57. <http://www.eia.doe.gov/oiaf/ieo/>
- David Rotman, “Natural Gas Changes the Energy Map,” *Technology Review*, November/December 2009. (10 pages)
<http://web.ebscohost.com.ezp-prod1.hul.harvard.edu/ehost/detail?sid=df9712b-35a0-4a0f-8d5b-ffaa06ff4f9a%40sessionmgr115&vid=6&hid=123&bdata=JnNpdGU9ZWhvc3QtbGl2ZS/ZzY29wZT1zaXRl#db=heh&AN=45563105>
- Amy Myers Jaffe, “Shale Gas will Rock the World,” *Wall Street Journal*, 10 May 2010. (5 pages)
http://online.wsj.com/article/NA_WSJ_PUB:SB10001424052702303491304575187880596301668.html
- (10 pages) Cindy Hurst, “Liquified Natural Gas: The Next Prize?” in Gal Luft and Anne Korin (eds.), *Energy Security Challenges for the 21st Century* (Santa Barbara, CA: Praeger Security International), 2009, pp. 271-281.

Class 20: Wednesday, November 14:

Presentation of Regional Strategies

Class 21: Monday, November 19:

Presentation of Regional Strategies

Class 22: Monday, November 26:

Geopolitical Consequences of a Shift to Nuclear Power

Guest Speaker: Professor Matt Bunn, Director of Managing the Atom, HKS

Required:

- (17 pages) Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, Chapter 18, “The Nuclear Cycle,” pp. 361-378.
- (4 pages) Sharon Squassoni, “Managing the Growth of Nuclear Power: Nuclear Renaissance or Not?” *Nuclear Challenges for the US: Coping with Change in the Global Nuclear Order*, (The Aspen Institute, 2001), pp. 13-17.
(<http://www.aspeninstitute.org/sites/default/files/content/docs/congressional/Squassoni-essay.pdf>).
- (11 pages) Ernest Moniz, “Why We Still Need Nuclear Power,” *Foreign Affairs*, November/December 2011, pp. 83-94.
- (10 pages) Amory B. Lovins, Imran Sheikh, and Alex Markevich, “Forget Nuclear,” *Rocky Mountain Institute*, 6 April 2008, pp. 1-10.
<http://www.rmi.org/sitepages/pid467.php>
- (6 pages) Scott Cullinane, “America Falling Behind: The Strategic Dimensions of Chinese Commercial Nuclear Energy,” *Journal of Energy Security*, September 2011,
(http://www.ensec.org/index.php?option=com_content&view=article&id=319:america-falling-behind-the-strategic-dimensions-of-chinese-commercial-nuclear-energy&catid=118:content&Itemid=376).
- (2 pages) Angela Henshall, “The Burning Issue”, *Wall Street Journal*, 11 April 2011.
<http://online.wsj.com/article/SB10001424052748704559904576228333814631302.html>
- (3 pages) Joseph Cirincione and Uri Leventer, “The Middle East’s Nuclear Surge,” *The New York Times*, 13 August 2007. http://www.nytimes.com/2007/08/13/opinion/13iht-edcirin.1.7097430.html?_r=1&pagewanted=print
- (5 pages) Gregory Gleason, “The Nuclear Fuel Bank and Iran,” *The Journal of Energy Security*, March 2011,
(http://www.ensec.org/index.php?option=com_content&view=article&id=286:the-nuclear-fuel-bank-and-iran&catid=114:content0211&Itemid=374).

Optional:

- (18 pages) MIT Nuclear Energy Study Advisory Committee, *The Future of Nuclear*, 2003, pp. ix-16. <http://web.mit.edu/nuclearpower/pdf/nuclearpower-summary.pdf>

- (21 pages) International Energy Agency, “The Implications of Less Nuclear Power,” *World Energy Outlook 2011*, OECD, 2011, pp. 447-468. (link to whole report on course page)
- (22 pages) Gareth Evans and Yoriko Kawaguchi, *Eliminating Nuclear Threats: A Practical Agenda for Global Policymakers*, Report of the International Commission on Nuclear Non-Proliferation and Disarmament, 2009, pp. 124-146.
<http://www.icnnd.org/Reference/reports/ent/default.htm>

Class 23: Wednesday, November 28:

CASE STUDY: Geopolitical Consequences of Solar Energy: The Case of DESERTEC

Required:

- (24 pages) Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, (New York: Penguin Press), 2011, Chapter 27, “Rebirth of Renewables,” pp. 523-547.
- (6 pages) IEA, *Technology Roadmap: Concentrated Solar Power*, 2010, pp. 5-11.
http://www.iea.org/papers/2010/csp_roadmap.pdf
- (5 pages) Cordula Meyer, “European dream of desert energy takes shape”, *Der Spiegel*, 27 May 2010. <http://www.spiegel.de/international/world/0,1518,695908,00.html>
- (12 pages) Johan Lilliestam, Saskia Ellenbeck, “Energy security and renewable electricity trade—Will Desertec make Europe vulnerable to the “energy weapon?,” *Energy Policy*, 2011. <http://www.sciencedirect.com.ezp-prod1.hul.harvard.edu/science/article/pii/S0301421511002151>
- (17 pages) Antoine Artiganave and Lukas Streiff, “Trans-Mediterranean Trade in Solar Energy: What Should Europe Do?” *Geopolitics of Energy Case on Desertec: Harvard Kennedy School of Government*, November 2010. (Available on course website)

Optional:

- Ummel and Wheeler, "Desert Power: The Economics of Solar Thermal Electricity for Europe, North Africa, and the Middle East," *Center for Global Development*, Working Paper No. 15, (2008).

Class 24: Monday, December 3:

Presentation of Energy Security Indices

Class 25: Wednesday, December 5:

Wrap Up/Looking Ahead