Instructor: Stephen R. Kelly  
stephen.kelly@duke.edu  
Office hours: Wednesdays 9-11 a.m. or by appointment  
Room 111  
John Hope Franklin Center  
Office telephone: 681-7334  
Home telephone: 403-2573

Duke University  
Spring 2014  
PUBPOL 583S.01, POLSCI 663S.01, ENVIRON 583S.01  
Wednesday 11:45-2:15  
Classroom: Rubenstein 151

Energy and U.S. National Security

Purpose of the Course: Most Americans know at some level that energy is fundamental to our national security and quality of life. Memories of $4-a-gallon gasoline are not that distant, and oil still hovers at a stubbornly high $100 a barrel. The impacts on our personal pocketbooks, not to mention our national balance of payments, are significant.

Political discourse of the last four decades is littered with exhortations that we need to break our “addiction to oil,” to borrow a phrase from former Texas oilman and later President George W. Bush. Soaring oil prices have plunged the U.S. economy into recession before, and while the U.S. economy has grown more resilient to oil shocks since the 1973 oil embargo, the 2008 oil price spike certainly played a role in the Great Recession that followed. President Obama’s National Security Strategy explicitly lists economic prosperity as a key component of U.S. national security. Unreliable energy supplies or volatile energy prices undermine that security.

If a damaged economy is one security consequence that we can link to energy, a damaged environment is another. The Pentagon has identified the security implications of global climate change driven by the greenhouse gases (GHG) fossil fuels emit. These include drought-impelled mass migrations, rising sea levels and the melting Arctic ice cap, which is opening our heretofore-ice-encrusted northern shores to potential threats, and to oil and gas exploration. One proposed remedy for this is the increased use of low-carbon energy sources. Yet these solutions are either theoretical at present, or themselves have opponents, from those who object to the noise of wind turbines to others who assert large-scale hydroelectric projects do more harm than good to the environment. And no one wants to live near the high-tension power lines needed to get electricity from dams or wind farms or solar arrays to our homes and businesses.

The central question we will address in this course is how the United States can ensure it has the energy it needs to propel the economy and protect its security while minimizing environmental damage. Doing this necessarily means
The U.S. is the Saudi Arabia of coal. If we’d just use more of it, we theoretically could cut our dependence on foreign oil, which, as we will see, represents the major part of our energy security risk. But coal produces twice the GHGs of natural gas, not to mention the environmental ravages of techniques like “mountaintop mining.” Technology may some day allow us to capture CO2 from coal, but not before we – and the Chinese – have injected billions of tons more into the atmosphere. The tradeoff here is between cheap, available and reliable coal on the one hand, and environmental degradation on the other.

On a slightly more complex level, Canada is our largest supplier of imported oil. More than half of it, however, comes from the oil sands of Alberta, and the process of getting it out of the ground emits twice as many GHGs as more conventional oil extraction. A proposal to build a pipeline that would allow us to import even more oil from Canada faces opposition on environmental grounds, based in part on the risks of pipelines, but mainly on the GHG load more oil sands product would emit. But if we don’t get oil from Canada, what are our options? Venezuela, led by a vehemently anti-American government? Nigeria, where warlords blow up pipelines or kidnap oil executives on a regular basis? Russia, a country that is willing to use energy for political as well as commercial ends? Again, tradeoffs.

We will define “secure” energy in this course as energy that is available, reliable, affordable and sustainable. It is also defined by geology, geopolitics, and technology. And the fundamental principle behind energy security is diversity of supply. How policymakers weigh all of those elements to keep the U.S. safe and running, especially at a time when our domestic energy supplies are surging, is what we will spend this semester investigating.

Course Structure: After an initial examination of the current energy profile of the United States and the principles of energy security, we will march through case studies of the top five foreign oil suppliers to the United States, evaluating the energy security implications of each source. An expert guest speaker will supplement our analysis of most of these case studies, each of which will help illustrate one of the four dimensions of energy security – availability, dependability, affordability and sustainability. We will then look at other oil suppliers, other oil consumers, and other sources of energy. Students will also prepare oral briefings on topics assigned by the instructor to explore related energy issues, prepare State-Department-style policy memos, and participate in two in-class simulations of energy security scenarios.

The final product for the course will be a policy memo you will assemble working in a team on a current energy security case I will assign. These final policy memos will be presented during the last two class sessions, and will bring together the memo-writing and oral-briefing skills you will acquire during the semester. The setting will be a press conference where you explain your policy
recommendation, and face questions from journalists, NGOs and cranky politicians.

**Expected Learning Outcomes:** As a recently retired U.S. diplomat, my goal is to walk you through the thought process of policymaking as we examine energy and its link to national security. I want you to approach these issues not as passive learners, but as officials charged with coming up with solutions to U.S. energy insecurity, a domain characterized more by ambiguity and ideology than by clear and obvious choices.

Specifically, you should leave this course with:

-- In-depth knowledge about energy security options, and the ability to apply general principles to particular cases to evaluate their advantages and disadvantages for policymakers.

-- Expertise in producing a variety of U.S. State Department memoranda, which require a succinct statement of facts, a tight focus on the purpose of the memorandum, and in some cases a recommended action.

-- The ability to deliver a concise, focused, oral briefing. As with memo writing, being able to deliver an effective policy briefing is a skill that will serve you well no matter what line of work you finally engage in. You will further refine your oral communication skills through in-class dissections of case studies, participation in two tabletop simulations, and your final briefing on a major energy security project.

**Required Reading:** Students should obtain the following books, which are available at the Regulator Bookstore on Ninth Street.


You will find additional readings in Sakai under “Schedule.” Go to the date for a given class, and the additional reading assignments will either be links in the text or attachments.

You will also need to download four case studies from the Harvard Business School website at a small charge, using this link: https://cb.hbsp.harvard.edu/cbmp/access/23457770

Since the course covers contemporary issues that are constantly changing, everyone should try to stay current. Reading The New York Times (www.nytimes.com) and The Wall Street Journal (www.wsj.com, electronic edition by subscription), as well as The Economist (www.economist.com), is highly recommended for general trends. The Oil and Gas Journal (http://www.ogj.com/index.html) is excellent for more in-depth coverage.

Course Requirements: This class will make use of techniques often described under the rubric of the “flipped classroom.” You will be responsible for learning many of the basic facts and concepts on your own time, making use of readings and other materials I will post on Sakai or that you will get from the course books. Our class time will be used to put these concepts to use, to quiz a recognized expert on new developments or thinking on a topic, to role-play energy security scenarios, to practice writing State Department memos, or to brief each other on key energy security topics. This means class time is not simply a duplication of the readings, but an arena where we will try out new ideas and see how well you understand them.

In part due to this setup, please note carefully the following:

Attendance: Mandatory. Each unexcused absence will result in a 5% reduction in the final grade. Please note that simply not feeling at the top of your game is not a reason to miss class. Your illness must be “incapacitating,” according to Duke’s policy. The key element here is to inform me in advance of an unavoidable absence. Information on Duke’s policies on illnesses is available at: http://trinity.duke.edu/undergraduate/academic-policies/illness.

Laptops: Prohibited. You will need a laptop for several in-class writing assignments. However, you cannot use any electronic device at other times in class.

Late memos: Penalized. Unexcused late submissions of required written memos can result in the loss of a full letter grade for each day they are overdue.

Grading: You will have graded assignments and feedback throughout the semester, and I will post grades quickly in Gradebook in Sakai. The basic principle here is, no surprises. You will be able to tell at any given moment by
looking in Gradebook how well you are doing. If you have a question about your
grade or need extra help at any point, please come see me. I do not grade on a
curve, and all of you can get an A. You are not competing against each other.

Grades will be based on the following components:

Class participation; 25 percent. As noted above, you will not sit passively
through this class. You will role-play, debate, analyze cases, question policy
experts, challenge conventional wisdom, and make your own policy. You should
come to class having read the assigned cases, and prepared to answer the
following questions;

-- Who are the actors in the case (e.g. private companies, sovereign
governments, national oil companies (NOC), NGO's)?

-- What are the constraints on their actions (weather, infrastructure, politics,
markets, etc.)?

-- How are the four dimensions of energy security (availability, affordability,
reliability, sustainability) at play here, and which would you say is predominant in
this case?

-- Finally, and perhaps most importantly, what would you highlight to the
Secretary of State about this case regarding U.S. interests?

For our expert speakers, you will be expected to prepare questions and/or
comments based on the case studies or other sources of information (you will do
some of this in your Forum posts – see below). This, as well as participation in
two in-class tabletop simulations, and active in-class engagement with your
fellow students’ oral briefings and final projects, will form the basis of the
participation grade. The highest grades will go to those who contribute regularly
and constructively, demonstrate a capacity to read carefully and think critically,
and make connections to earlier lessons and to the overall themes of the course.

Forum, 10 percent. In Sakai you will find topics keyed to each week of the
course under the Forum “Things to Think About.” You should look at these
topics before you do the readings. When you are ready, find the best 200 words
to answer the question posed, react to other posts, or develop a new angle. Try
when appropriate to cite specifics from the readings.

The main idea here is to prepare you to engage with our several guest speakers.
your posts should reflect not just your command of the facts, but also your
analysis of how those facts bear on U.S. energy security, and your ability to
formulate probing questions for our experts.
Please make your post by 9 p.m. each Tuesday night. The instructor will comment on posts from time to time, and I encourage you to comment on your classmates’ posts, so check back periodically. A for evaluating Forum posts is found at the end of this syllabus.

Oral briefing, 10 points. You will each do an individual, eight-minute, oral briefing, choosing from a list of topics found at the end of this syllabus. You should review these topics immediately, and provide me with your top five choices by January 22. The schedule for the briefings is embedded in the class schedule that follows.

Delivering an effective oral briefing is an essential skill, but one that many students struggle with. “Effective” is a combination of entertaining, informative, credible and persuasive, all done in a time-constrained environment. The major weaknesses behind unsuccessful briefings stem from inadequate preparation. To be credible and persuasive, you have to know what you are talking about, rehearse several times so you hit your time mark and make fluid transitions, and have a clear and compelling thesis. This cannot be accomplished if you start work on your briefing the night before.

The Sunday before you deliver your briefing you should send me by email your “thesis” on your topic, which is a capsule summary of the argument you plan to make, and the sources you have consulted. Your thesis should be provocative and compelling, and debatable as well, not just a statement of fact (my “model” oral briefing, for example, will argue that the entire concept of "peak oil" is baloney).

As noted above, you will have eight minutes for your briefing. You can use PowerPoint or other visual aids, up to a limit of six items (slides, charts, maps, etc.). But you don’t have to use any. The focus here is on the information you wish to impart and the argument you make, not the props you are using. You must state within the first minute what your thesis is, and then proceed to prove it. I will use a rubric, found at the end of this syllabus, to evaluate your briefing. You will use this rubric to grade me January 22.

The only formal written product connected to these briefings is a list of sources you consulted, cited in bibliography format. The draft version of this, as noted above, is due the Sunday before you brief. A final formal version is due when you make your presentation.

To repeat the key point from above, the most important element behind a successful briefing is preparation. Try to find time to run through your briefing out loud to your roommate or teammates. You can make an appointment to see me before your briefing and practice what you are planning to say. You should also send me any electronic visual aids you plan to use via email the night before you
are scheduled to brief. I will load them on my computer so we don’t waste time on technical issues in class.

Memo writing, 30 points. You will write a series of six memos using several U.S. State Department formats. Templates for these memos and examples will be posted in Sakai for the class periods where they are needed. I will also post explanatory videos on Sakai. The first memo of each type, done in class, will be evaluated but not graded. The second will count five points, and the third 10 points. The key here is learning to think like a policy maker, which in general means being ruthlessly succinct in your prose and specific about the actions you are recommending. Rubrics for evaluating your memos are found at the end of this syllabus. I will discuss these memos in class January 22 and February 12.

Final Project, 25 points. You will also find at the end of this syllabus a list of four final projects. You should look at these early on, and give me a rank-ordered list of your preferences -- rank them all! -- by February 12. I will assign teams to work on the projects by February 19.

The point of this assignment is to put to use the skills you have refined in memo writing and oral briefings. The final products are a team-generated outline and bibliography due March 26, and a final action memo you should send to me electronically by April 4. A signed hard copy is due in class April 9. The teams will brief the rest of the class on their projects in class on either April 9 or April 16. Each team member must have a speaking role. The outline/bibliography is worth 5 percent points, the final memo 15 points, and the in-class briefing 5 points. The final total grade will apply equally to all team members.

Students should schedule at least one meeting with me as a team before the outline is due March 26. Time will be provided in class March 19 for teams to discuss their outlines and how they will distribute the work. I can help arrange interviews with key players, on request.

Although in the day-to-day workings of the State Department action memos must be kept short, in this case the final product will be 2,000-2,500 words, and should thoroughly review the background of the issue, describe the current situation, and explicitly address each of the four dimensions of energy security. Your final recommendation should be your team’s consensus view.

Duke Community Standard: All students will be expected to abide by the Duke Community Standard, which reads:

“Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and non-academic endeavors, and to protect and promote a culture of integrity. To uphold the Duke Community Standard I will not lie, cheat, or steal
in my academic endeavors; I will conduct myself honorably in all my endeavors; and I will act if the Standard is compromised.”

Students who are found to have plagiarized material, defined by the Duke Libraries Guide to Library Research as “intentionally or unintentionally appropriat(ing) the ideas, language, key terms, or work of another without sufficient acknowledgement that such material is not one’s own,” may face a failing grade for the assignment or the course. For assistance on the correct way to cite material see the presentation entitled “Avoiding Plagiarism” at the following link: http://twp.duke.edu/uploads/assets/workshop_plagiarism.pdf

Accommodation: Duke University is prepared to explore possible coverage and reasonable academic adjustments and accommodations to permit graduate, professional and undergraduate students with disabilities to participate in the programs and activities available to students without disabilities. You can get more information at http://www.access.duke.edu/students/index.php, the Student Disability Access Office.

Class schedule: See Schedule in Sakai for the assigned readings and last-minute changes.

Class 1 – Introduction – January 15

Assignments: First Forum post due in Sakai by 9 p.m. January 14.

See Sakai for readings for our first class. Going to the Schedule section of Sakai should be your default move for every class.

You will role-play managing an energy crisis in this class, and the readings and a short video on “proved reserves” will help you save the world more efficiently.

Class 2 – Dimensions of Energy Security – January 22

Assignments: Oral briefing preferences due.

Forum post due in Sakai by 9 p.m. January 21.

You will write a short checklist memo in class. Bring your laptop and download the sample memo from Sakai (you will use exactly the same font, margins, headings, etc., in your memo). The memo will be to the Secretary of State, and will describe for him which dimension of energy security is most important to U.S. energy security today, based on the readings and our guest expert’s remarks. Maximum of five bullets. You will email me your checklist at the end of class. I will review it, but it will not count toward your final grade. The challenge here is to organize and boil down your thinking to isolate the most
important points the Secretary needs to know, and then present them in a compelling enough way that he will actually read your memo.

Oral briefing: Peak Oil (the instructor will model this topic, which you will score using the rubric at the end of the syllabus. Be generous!)

Guest expert: David Goldwyn, President Goldwyn Global Strategices, from Coordinator for International Energy Affairs at the U.S. State Department (see bio in Sakai).

Class 3 – U.S. Energy Overview and Oil for Dummies – January 29

Assignments: Forum post due by 9 p.m. January 28.

You will write an information memo in class based on the readings and our guest speaker's information about the current state of energy in the United States. Your memo will be to the Secretary of State, and will discuss the key points from the EIA outlook you think the Secretary should be aware of when looking at U.S. energy security. Review the rubric and sample. It will count for 5 points.


Class 4 – Mexico and Availability – February 5

Assignments: Forum post due by 9 p.m. February 4.

Write an information memo from you to the Secretary of States outlining the key factors the U.S. should take into account in evaluating Mexico as an energy supplier. Be sure to discuss the prospects for the continuing availability of Mexican oil to the U.S., and mention your criteria for evaluating it. Use the format contained in Sakai. This memo should be no more than two pages. It is due February 12 by email and in hard copy, and will count for 10 points.

Oral briefings: Cantarell, and Mexico and Natural Gas.

Guest expert: Duncan Wood, Director, Mexico Institute, Woodrow Wilson International Center for Scholars (see bio in Sakai).

Class 5 – Saudi Arabia and Affordability – February 12

Assignments: Forum post due by 9 p.m. February 11.
Rank order preferences for final project due today.

Info memo on Mexico due by email and in class in hard copy.

You will write an action memo in class to the Secretary of State recommending that he convene a task force to examine the energy security implications of oil supplies from Saudi Arabia and the Middle East. Your memo will briefly outline the history of the U.S. energy relationship with Saudi Arabia, describe the current situation affecting Saudi oil, and then make recommendations for possible actions the U.S. could take to protect its energy security. Although several factors will likely be relevant, be sure to mention affordability as one of them. You will email me your product at the end of class. I will review it, but it will not count toward your final grade. As with the information memo, the challenge here is to isolate the key pieces of background. But in the action memo you must be explicit about the action you want the Secretary to take. See the rubric and template in Sakai.

Oral briefing: The Strait of Hormuz.


Class 6 – Canada and Sustainability – February 19

Assignments: Forum post due by 9 p.m. February 18.

You will write an action memo at home to Secretary Kerry with your recommendation on how the U.S. should handle energy supplies from Canada. Focus on what you believe are the key issues currently facing the U.S., and specifically address the issue of sustainability. Your memo might deal with a specific decision you recommend to the Secretary—ban all Canadian oil—or it might recommend a process you believe the Secretary should institute to deal with a Canadian energy issue. Use our guest expert in class to try out or refine your ideas. Since a team will be working on Keystone XL as a final project, do not make this the focus of your memo. Two pages max. Due electronically and in class in hard copy February 26. This memo will count for 5 points.


Guest expert: Thomas Huffaker, Manager, Public and Government Affairs Imperial Oil Limited, and former U.S. Consul General in Calgary, Alberta (see bio in Sakai)

Class 7 – Venezuela and Reliability – February 26
Assignments:  Forum post due by 9 p.m. February 25.

Action memo on Canada due by email and in class in hard copy.

Oral briefing:  CITGO.

Guest expert: Patrick Duddy, former U.S. Ambassador to Venezuela 2007-2010 (see bio in Sakai.)

Class 8 – Russia, Nigeria and Putting the Dimensions Together – March 5

Assignments:  Forum post due by 9 p.m. March 4.

Write an action memo to Secretary Kerry with your recommendation on how the U.S. should interact with Russia or Nigeria regarding energy. Your memo should explicitly highlight one of the dimensions of energy security you will argue is most important in evaluating whichever country you choose. Maximum of two pages. This will be due March 19 electronically and in class in hard copy. It will count for 10 points.

Oral briefings:  The Oil Curse, and Russia and Arctic Oil

Class 9 – Other Major Oil Consumers: China, India and the International Energy Order – March 19

Assignments:  Forum post due by 9 p.m. March 18.

Action memo on Nigeria/Russia due by email in class in hard copy.

Oral briefings:  China and Venezuela, the U.S. Strategic Petroleum Reserve, and Japan and Nuclear Energy.


Class 10 – Other Risks in Energy Security – March 26

Assignments:  Forum post due by 9 p.m. March 25.

Final action memo outline and bibliography due in class in hard copy, signed by all team members.

**Class 11 – Other Sources of Energy – April 2**

Assignments: Forum post due by 9 p.m. April 1.

Oral briefings: Arctic Drilling and Downeast Tidal Power.

Guest expert: Vic Rao, Executive Director, Research Triangle Energy Consortium (see bio in Sakai).

**Class 12 – Final Project Briefings, Part 1 – April 9**

Assignments: Final action memos due in class in hard copy, signed by all team members. Electronic versions due April 4.

First two teams will present their recommendations in class today. You should read their action memos in detail, and be prepared to engage as a journalist, an NGO leader, a politician, or an academic.

**Class 13 – Final Project Briefings, Part 2 – April 16**

Bring your laptop to class.

Second set of presentations. Those who presented last week will role-play the audience this week.
Topics for Oral Briefings

The following topics all touch on an aspect of energy security, and are listed in the order they will be presented. Your job in each case is to describe the issue at hand, and provide a clear and provocative thesis on how it impacts U.S. energy security. You should state your thesis within the first minute of your briefing. You will have eight minutes total, and can use no more than six visual aids. If these are electronic, be sure to send them to me electronically well before class. You will be graded based on the rubric that follows in this syllabus.

The Sunday before you deliver your briefing you should send me by email your “thesis” on your topic. Your thesis should be a capsule summary of the argument you plan to make, and the sources you have consulted. Your thesis should be provocative and compelling, and debatable as well, not just a statement of fact. The only written product is a list of the sources you consulted, in bibliography format, due when you give your briefing.

Please send me a rank order list of your top five choices by January 22.

Cantarell. This supermajor oil field was discovered in 1976 and has been the most productive field in Mexico. But its production has been declining dramatically. What has caused this decline, what could reverse it, and how does this affect the security of Mexico as an energy supplier to the U.S.?

Natural Gas in Mexico. Although Mexico possesses vast reserves of potentially recoverable offshore and shale gas, it has not been able to develop its own reserves and must import natural gas from the United States. What does this tell us about the state of the Mexican energy sector, how might things change under new energy laws, and how do Mexican imports of natural gas from the United States impact U.S. energy security?

Strait of Hormuz. This outlet from the Persian Gulf is regarded as a vulnerable choke point for Middle Eastern oil supplies. Iran has repeatedly threatened to close the strait if the U.S. and EU follow through on sanctions related to its nuclear program. From an energy security perspective, what are the challenges posed by this situation? What is your thesis on how the U.S. should manage these risks?

Kalamazoo Pipeline Break. On July 26, 2010, a 30-inch pipe carrying Canadian “dilbit,” a corrosive petroleum product from the Canadian oil sands, ruptured near Marshall, MI, and dumped some 819,000 gallons into the Kalamazoo River, a Lake Michigan tributary. The pipeline is owned by Enbridge, a Canadian company with the largest oil pipeline network in North America. What caused the break, how did Enbridge and the EPA respond, and what is your thesis on what this event teaches us about pipelines and U.S. energy security?
Northern Gateway. As oil production from the oil sands has surged in recent years, Canada has sought ways to move it to the West Coast as a hedge against total dependence on the U.S. market. The Northern Gateway pipeline would allow 525,000 barrels of crude a day to flow to a port on the coast of British Columbia for onward shipping. Construction of the pipeline faces stiff opposition from environmental and aboriginal groups. What is the current status of the project, what are current projections on its completion, and what is your thesis on what it would mean for U.S. energy security if Canada has the option to sell oil to China?

CITGO. Although not widely known in the United States, the CITGO Petroleum Co. has been wholly owned by the Venezuelan oil company PdvSA since 1990. In addition to gas stations throughout the U.S., CITGO also owns three large refineries. How did a major U.S. oil company end up in the hands of a government unfriendly to the United States, how much does politics play into its operations, and what is your thesis on how the ownership structure impacts U.S. energy security?

The Oil Curse. Aka the “resource curse,” this afflicts many of the large foreign energy suppliers to the U.S., including Nigeria. What is it, how does it impact U.S. energy supplies, and what is your thesis on how U.S. policymakers should handle it when making decisions about U.S. energy security?

Russia and Arctic Oil. On August 2, 2007, a manned Russian submersible planted a Russian flag on the floor of the Arctic Ocean at the North Pole. Russia has asserted that vast tracts of the Arctic Ocean are an extension of its continental shelf, thereby giving it exclusive rights to exploit resources such as oil and natural gas. What is the basis of the Russian claim, how does it conflict with other claims, and what might this mean for U.S. energy security given estimates the Arctic Ocean may contain up to 20 percent of the world’s untapped hydrocarbon reserves?

China and Venezuela. The late Venezuelan President Hugo Chavez loudly threatened to find other markets for his oil to diversify away from the United States. In November 2011 he signed deals with Beijing worth $6 billion to boost sagging Venezuelan oil production. Given China’s voracious appetite for energy – its energy demand doubled from 2000 to 2007 – this deal could make sense for both countries. How extensive are Chinese investments in Venezuela? Do they represent a threat to U.S. oil supplies from our fourth largest oil provider?

Strategic Petroleum Reserve. The U.S. SPR was set up after the 1973 oil embargo. What is it, how often has it been used, and how does it impact energy markets and security? What is your thesis about the trigger point for drawing from the reserve, i.e. should it be used to slow rising prices, or just for grave national shortages of oil?
Japan and Nuclear Energy. After the Fukushima disaster of 2011, Japan has begun to move away from nuclear energy, which had provided 30 percent of the country’s electricity and was expected to produce even more in the future. What are the consequences for Japan of moving away from nuclear generation, and what are the potential lessons and opportunities for the United States?

Hurricanes and Critical Infrastructure. Hurricanes Katrina and Rita caused major damage to the U.S. energy industry in 2005. What happened, what effect did they have on energy security, and what lessons can be learned from them about protecting critical energy infrastructure?

2003 Power Blackout. On August 14, 2003, an electrical blackout began in Ohio and cascaded through eight states and the Canadian province of Ontario, leaving more than 50 million people in the dark. What caused it, what have we learned from it, and what does it say about electrical reliability and energy security?

Rail Transport of Petroleum. A series of railroad disasters, including a derailment of oil tankcars in the Quebec town of Lac Mégantic in 2013 that left 47 people dead, have highlighted the dangers of transporting oil by rail. How prevalent has this become, why is it growing, and what are the implications for U.S. energy security?

Arctic Drilling. In August 2011 the Interior Department’s Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) issued conditional approval for Royal Dutch Shell’s offshore division to drill up to four shallow water exploration wells in Alaska’s Beaufort Sea beginning in July 2012. That drilling got off to a slow start, and has ended 2012 with an emerging disaster – a drilling rig loaded with diesel fuel ran aground in high seas while being towed out of the Arctic Ocean. The Arctic is estimated to contain 20 percent of the world’s recoverable oil and gas, but the financial and environmental costs of tapping it are daunting. What is the history of Shell’s effort, what are its prospects for success, and how might this new supply affect U.S. energy security?

Downeast Tidal Power. The first tide-powered electric generator in the Western Hemisphere went on line in September 2012 when the Ocean Renewable Power Co. put into operation a tidal generator on the coast of Maine. The company eventually hopes to generate 5 megawatts of electricity from some of the steepest tides in the world. Efforts to harness tides for electric generation go back to 1935 in the United States. What is the status of this latest effort, and what impact might it have on U.S. energy security?
Final Action Memo Topics

Working in a team of four students, you will write a final action memo on one of the following topics. Review these topics carefully, and rank order all four of them from your most preferred to the least. Please send me your choices by February 12, in hard copy or by email.

Keystone XL Pipeline. In 2008 the TransCanada Corporation applied to the U.S. State Department for a Presidential Permit that would allow it to construct a 1,200-mile pipeline to move petroleum products from the Alberta oil sands to refineries on the Gulf Coast near Houston. After numerous delays caused by routing issues in Nebraska, the State Department is expected to make a final decision in the Spring of 2013. You are Ambassador Carlos Pascual, the head of the State Department’s Bureau of Energy Resources, and you are writing the final decision memo to the Secretary of State on Keystone XL. Your memo should outline the history of the project, the legal and regulatory frameworks that apply, the background of other pipelines crossing the U.S.-Canada border, and the current public discussion about the application. You should also give your assessment of the pipeline’s impact on U.S. energy security, using the four dimensions of energy security. Finally, you should provide a recommendation to the Secretary on whether the pipeline is in the “national interest” – the requirement spelled out in the Executive Order for granting a Presidential Permit.

New York Ban on Fracking. New York State currently bans drilling for shale gas using an extraction process called “fracking.” But the state’s Department of Environmental Conservation has been considering lifting the ban for more than five years. A decision was expected in 2012 but was postponed pending further study of the environmental impacts. That decision is still pending, leading one energy company to file suit against the state to force a decision. New York sits atop the rich shale gas play known as the Marcellus Shale, which neighboring Pennsylvania has extensively and profitably exploited. Drilling supporters say it will bring badly needed jobs and economic activity to the poorest parts of New York. Opponents question its environmental impact, especially on water supplies. You are the N.Y. State Commissioner for Environmental Conservation, Joseph Martens. What is your recommendation to Governor Cuomo on lifting the ban? Base your analysis on the four dimensions of energy security, and take into consideration the impact additional shale gas from New York would have on national natural gas supplies.

Exporting Natural Gas. The boom in shale gas production in the United States has led to predictions domestic supply will exceed demand by 2016. Producers want to export the surplus, taking advantage of significantly higher gas prices in Europe and Asia. Opponents, especially energy-intensive domestic industries, say the U.S. should keep its gas on-shore to maintain low prices and fuel an industrial revival. Exporting natural gas requires the construction of facilities to liquefy it and pump it about specially designed LNG vessels. The U.S.
Department of Energy (DOE) must issue permits for the construction of these export terminals. DOE has already approved four permits, but 20 more are pending, including three that it may decide on in 2014. You are the head of the office that is preparing a recommendation for the Secretary of Energy on whether to approve these four permits. Your memo should review the background of domestic natural gas supplies, the findings of a December DOE report on exporting natural gas, and use the four dimensions of energy security in analyzing the impact of exporting natural gas on U.S. energy security.

Northern Pass. In December 2008, the Canadian electric utility Hydro-Québec, along with American utilities Northeast Utilities and NSTAR, created a joint venture to build a new power line from Windsor, Quebec, to Deerfield, New Hampshire. Estimated to cost $1.1 billion, the 180-to-190-mile line called Northern Pass is projected to carry 1,200 megawatts, enough to power approximately one million homes. Hydro-Québec generates 98 percent of its electricity from hydroelectric dams in northern Québec. Estimates are that New England could meet one third of its Regional Greenhouse Gas Initiative commitments with the hydropower coming through this new power line alone. But numerous groups oppose its construction for environmental and other reasons. The FERC approved the project in 2009, but it still needs a Presidential Permit to proceed, because it crosses an international land border. Unlike the Keystone XL oil pipeline, whose Presidential Permit is handled by the U.S. State Department, electric lines that cross the border are handled by the Department of Energy. You are the head of the office in DOE that is preparing the decision memo for the Secretary. Your action memo will review the history of cross-border power lines, the details of the current project, and the factors spelled out in the Executive Order for determining whether the power line is in the public interest. You and your staff should then make a recommendation on granting the Presidential Permit, using the four dimensions of energy security in your final analysis and justification.
## Oral Briefing Assessment Rubric

<table>
<thead>
<tr>
<th>Speaker: _____________________________</th>
<th>Date: ___________</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Content</strong></th>
<th><strong>Superior</strong></th>
<th><strong>Good</strong></th>
<th><strong>Minimal</strong></th>
<th><strong>Poor</strong></th>
<th><strong>Points</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker demonstrates complete mastery of the material, provides pertinent examples or statistics, and easily answers class questions. Greatly increases audience understanding of topic.</td>
<td>Generally strong control of material. Able to answer most class questions convincingly, Examples pertinent. Raises audience understanding of most points.</td>
<td>Very thin data or evidence. Weak examples, facts or statistics. Not clear speaker understands or is familiar with topic. Audience unsure of key points.</td>
<td>Speaker says practically nothing, or focuses on irrelevant content. Very weak or no support of subject though examples.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Structure</strong></th>
<th><strong>Superior</strong></th>
<th><strong>Good</strong></th>
<th><strong>Minimal</strong></th>
<th><strong>Poor</strong></th>
<th><strong>Points</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Message is overtly organized, with a clear thesis, a logical and easily followed sequence of points, fluid transitions and a convincing summary. Anticipates opposing arguments.</td>
<td>Organization is apparent, and listener has no problem seeing the sequence and relationship of ideas. Thesis and summary are clear if not compelling.</td>
<td>Organization appears somewhat random. Doubt about major points. Listener must make some assumptions about sequence and relationship of ideas.</td>
<td>Subject and purpose not defined. Major ideas left unclear. No conclusion, or new material introduced at the end.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Delivery</strong></th>
<th><strong>Superior</strong></th>
<th><strong>Good</strong></th>
<th><strong>Minimal</strong></th>
<th><strong>Poor</strong></th>
<th><strong>Points</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker delivers the message in a confident, poised, enthusiastic and audible fashion. The volume and rate vary to add emphasis and interest. Very clear pronunciation. Very few “ahs,” “ums,” or “you knows.” Great sales pitch!</td>
<td>Thoughts articulated clearly, but not in an engaging fashion. Few “ahs” or “ums.” Audible and well-paced. You would listen to this sales pitch, but you might not buy.</td>
<td>Speaker covers main points, but loses train of thought, refers often to written text. Often inaudible or too fast or slow. Many “ums” or “ahs.” You would buy only if your mother was selling.</td>
<td>Speaker seems unsure or uninterested, with long pauses or frequent “ums.” Reads the text of slides aloud. Reads from notes with no eye contact. Hard to hear. No sale!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Visual aids</strong></th>
<th><strong>Superior</strong></th>
<th><strong>Good</strong></th>
<th><strong>Minimal</strong></th>
<th><strong>Poor</strong></th>
<th><strong>Points</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Slides or other visual aides are clear, uncluttered and illustrate, organize or summarize key points without distracting from content. No misspellings, layout errors or grammar mistakes.</td>
<td>Graphics relate to topic and add to understanding, but are somewhat pedestrian. One or two misspellings. A few too many words. Graphics hard to read.</td>
<td>Slides are often irrelevant and amuseless, with spelling mistakes and layout problems. Excessive text, unintelligible graphics.</td>
<td>Graphics are unexplained, irrelevant or absent. Slides are jammed with text. Many grammatical or spelling errors, as well as errors of fact.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Timing</strong></th>
<th><strong>Superior</strong></th>
<th><strong>Good</strong></th>
<th><strong>Minimal</strong></th>
<th><strong>Poor</strong></th>
<th><strong>Points</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 30 seconds of the allotted time.</td>
<td>Within a minute of allotted time</td>
<td>Within two minutes of the allotted time.</td>
<td>Too short or long by more than two minutes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Total:** | |

**Comments:**
<table>
<thead>
<tr>
<th></th>
<th>Superior</th>
<th>Good</th>
<th>Minimal</th>
<th>Poor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly &amp; Original</td>
<td>Clearly and succinctly addresses the question posed. Includes analysis or synthesis of course materials. Cites class readings or high-quality external materials. Offers pertinent and original insights or information. Poses challenging and/or novel questions. Thoughtful and stimulating.</td>
<td>Generally addresses the question posed. Usually includes analysis or synthesis of course materials. Some citations of readings or external materials. Some original thoughts, although not necessarily provocative.</td>
<td>Significant amount of material copied from course materials or outside sources without condensing through analysis or synthesis. Too long or short, and includes off-topic material. Few citations. Too many &quot;me too-isms.&quot;</td>
<td>Does not address the question posed. No evidence of cognitive processing or familiarity with course materials. Did you do the readings?</td>
<td></td>
</tr>
<tr>
<td>Timely</td>
<td>At least one posting for every assignment, done early enough so the majority of students can profit from the information added or react to the posting.</td>
<td>Most contributions are made when the thread is still alive and flowing, and all are made before the 9 p.m. deadline.</td>
<td>Typically one of the last to respond to an active threat, with some posts missing the 9 p.m. deadline. Occasional missed posting.</td>
<td>Posts message after most students have finished participating in the thread. Often no posting at all.</td>
<td></td>
</tr>
<tr>
<td>Collaborative &amp; Significant</td>
<td>Responds positively to the work of others with additional insights. No attempt to dominate conversation. Multiple posts on same topic contribute to the flow of conversation.</td>
<td>Responds to the work of others. Multiple postings contribute to the flow of conversation.</td>
<td>Seems unaware or uninterested in responding to others without being prompted. May dominate conversation or denigrate others’ point of view.</td>
<td>Posting does not advance the substance of the conversation. Openly disdainful of other postings, or ignores them entirely.</td>
<td></td>
</tr>
<tr>
<td>Mechanics</td>
<td>No spelling, grammar or usage errors. Statements always comprehensible.</td>
<td>A few errors that do not impede understanding.</td>
<td>Some errors that may occasionally impede understanding.</td>
<td>Many errors that significantly impede understanding.</td>
<td></td>
</tr>
</tbody>
</table>

**Total:** 10

Comments:
<table>
<thead>
<tr>
<th></th>
<th>Superior</th>
<th>Good</th>
<th>Minimal</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>Cites multiple, credible and pertinent sources. All facts cited correct and, if controversial, provides attribution, context or critical analysis.</td>
<td>Some original research. Facts cited correct but not compelling, numerous, or original. Attributes where needed.</td>
<td>Little new research. Most information copied verbatim. Some facts cited incorrect. Attribution for extreme claims needed.</td>
<td>No evidence of original research. Facts incorrect, missing or randomly cited from unreliable sources.</td>
</tr>
<tr>
<td>Creativity</td>
<td>Novel, bold and original material or approach. Shows complete mastery of topic and ability to break new ground.</td>
<td>Some original ideas, but not substantial or sustained.</td>
<td>Little novel material. Predictable and mechanical.</td>
<td>Parrots common ideas of others. No original input.</td>
</tr>
</tbody>
</table>

**Total:**
<table>
<thead>
<tr>
<th></th>
<th>Superior</th>
<th>Good</th>
<th>Minimal</th>
<th>Poor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action Orientation</strong></td>
<td>Spells out clearly defined, specific and feasible actions for principal to take. Actions detailed in body of memo as well as in recommendation.</td>
<td>Actions are spelled out in body of memo, but are somewhat general, vague and/or perfunctory.</td>
<td>Action only mentioned in recommendation. No follow-up on specific steps in body of memo.</td>
<td>Fails to mention any actions principal should take.</td>
<td></td>
</tr>
<tr>
<td><strong>Mechanics</strong></td>
<td>Format, grammar, spelling and syntax perfect. Uses mix of sentence length, active voice, first person, and royal “we.” Journalistic in style.</td>
<td>Formatting is perfect, but a few usage errors that do not obscure meaning. Some passive voice. Academic sounding.</td>
<td>Some formatting errors. Usage errors sometime obscure meaning. Wrong tone or voice.</td>
<td>Numerous formatting, grammatical or spelling errors. Unintelligible.</td>
<td></td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>Cites multiple, credible and pertinent sources. All facts cited correct and, if controversial, provides attribution, context or critical analysis.</td>
<td>Some original research. Facts cited correct but not compelling or numerous. Attributes where needed.</td>
<td>Little new research. Most information copied verbatim. Some facts cited incorrect. Attribution for extreme claims needed.</td>
<td>No evidence of original research. Facts incorrect, missing or randomly cited from unreliable sources.</td>
<td></td>
</tr>
<tr>
<td><strong>Creativity</strong></td>
<td>Novel, bold and original proposals. Shows complete mastery of topic and ability to break new ground.</td>
<td>Some original ideas, but not substantial or sustained.</td>
<td>Few novel proposals. Predictable and mechanical.</td>
<td>Parrots common ideas of others. No original input.</td>
<td></td>
</tr>
</tbody>
</table>

Overall Comments: