

Strategic Approaches to Corporate Energy Efficiency

Draft 1.7

MGT 290-2 CRN 42289

Winter 2012 Tuesday 3:10-6:00 1302 Gallagher Hall

Office Hours by Appointment
Professor Nicole Woolsey Biggart
nwbiggart@ucdavis.edu

Graduate School of Management
3320 Gallagher Hall
nwbiggart@ucdavis.edu

Just refrigerator efficiency saves more energy than all that we're generating from renewables, excluding hydroelectric power... I cannot impress upon you how important energy efficiency is. It doesn't mean you eat lukewarm food and your beers are lukewarm. You can still have it; you just make a better thing.

– Stephen Chu, Secretary, U.S. Department of Energy, Nobel Laureate in Physics

Today few doubt that reliance on fossil fuels is contributing to climate change, environmental disasters, and economic support for regimes that do not serve the interests of their populations and industrialized nations. It is also true that fossil fuels are and will remain critical to the quality of life many people have, or aspire to. How are corporations dealing with the reality of energy use today, with its political, environmental, and financial concerns?

The most important strategic response to energy use that firms can take is energy efficiency. The efficient use of energy is a hedge against price volatility and supply uncertainty, saves money when done well, and offers the fastest and most effective way to reduce greenhouse gas emissions. Over time an effective energy efficiency response by business will have an economic, political and social impact.

This course examines energy efficiency as a strategic solution to corporate financial, competitive, and sustainability goals. The course covers three topics: 1. energy fundamentals for non-experts, 2. corporate strategies for reducing energy consumption, and 3. energy efficiency as a new market opportunity. Although there will be some technical materials this is a strategy course and does not presume expertise in energy nor the intention of entering the energy industry. Rather, we will focus on energy as a critical business input – much like financial inputs – to examine how efficiency strategies can manage this resource wisely to meet corporate goals.

COURSE REQUIREMENTS

READINGS are linked below. We will also host speakers from government and industry.

ASSIGNMENTS: This course is a collective learning class and students will be actively involved in the organization and discussion of topics each week.

GRADING

1. LEADING A CLASS: 25% (may be done with others). Students will be asked to present materials to the class, as well as to lead discussions with guests. When appropriate students should prepare discussion questions, slides that can be made available to the class, demonstration, conduct role play, hold a debate or use some other means for helping the class to understand an issue. I will work with you to define the topics.
2. RESEARCH PAPER: 25% Select a topic related to one of the subjects we will discuss during the quarter and research the issues/controversies/technologies/solutions more narrowly and deeply as we will have time only for a survey of topics. For example if we are talking about carbon markets you might write a paper about how the European market is working, or about how mandatory carbon reporting is influencing Australian financial reports. Alternatively you may be interested in researching novel financial vehicles that support EE, or marketing strategies that promote energy efficient behaviors. Pick something that you would like to learn more about. As a guide plan on 4-7pp.
3. WHITE PAPER: 25% Students will write 4-6pp on a topic with instructor approval. The White Paper will be written for possible publication on the EEC website and may include PowerPoint and graphics as well as a written document. White Papers identify a situation or problem, bring data to bear on it, and make a recommendation as to a course of action. White papers were originally government documents but are now used by businesses and think tanks to argue for products and policies. Think of it as a long editorial.

Here are two takes on this: <http://www.stelzner.com/copy-HowTo-whitepapers.php> and <http://www.dirjournal.com/business-journal/how-to-write-a-white-paper/>

Examples: http://www.cree.com/products/pdf/cree_led_lifecycle_whitepaper.pdf
<http://www.scribd.com/doc/20536588/Calvert-White-Paper-The-Future-for-Alternative-Energy>
http://www.vmware.com/files/pdf/WhitePaper_ReducePowerConsumption.pdf
http://www.nec.com/global/prod/express/library/pdf/idc_ecocenter.pdf

4. ENERGY EFFICIENCY PROPOSAL: 25%. This can be a solution for corporate application OR a proposal for a new product or service. The proposal should a. Analyze a problem or opportunity. b. Describe the solution and why it has promise for success. c. Examine the barriers (policy, financial, technical, competitive, etc.) your proposal might face. d. Explain how you would overcome these barriers. I recommend doing this assignment in groups of 3-5 people who have a variety of skills and experience. 15-25pp as appropriate. These will be presented to the class at the last class meeting. May be done as a group.
5. DISCUSSION BONUS: [+]Students are expected to attend class and to participate in a way that increases learning for everyone. Students who add appreciably to the learning of others through their participation in class will get a "+" added to their grade. For example if your grade tallies equal a B+ but you have been a thoughtful and active member of the class your final grade will be an A- recognizing your contribution to learning.

OVERVIEW OF COURSE

Class 1: 1/10	Introduction to Course: The Problem and the Opportunity
Class 2: 1/17	Energy Basics: Erick Markell, Sr. VP Strategy, Puget Sound Energy, on Utilities
Class 3: 1/24	Energy Efficiency Costs and Benefits: Aaron Singer, Pacific Carbon Exchange
Class 4: 1/31	Energy Efficiency Community-Corporate Strategic Partners: Elisabeth Brinton, SMUD and Ben Finkelhor, EEC (Class to be held at West Village).
Class 5: 2/07	Energy Efficiency and Corporate Sustainability Strategy: Bill Mitchel, Sr. Dir. Microsoft
Class 6: 2/14	Energy Efficiency and Social Enterprise/Emerging Markets: Kurt Kornbluth, Dir. D-Lab
Class 7: 2/21	Water-Energy Efficiency: WEEC, Program Manager Ned Spang and Peter Yolles CEO WaterSmart
Class 8: 2/28	Energy Efficiency as Business Opportunity: CLTC Tour
Class 9: 3/06	Energy Service Companies: Jim Davis, CEO Chevron Energy Solutions (invited)
Class 10: 3/13	Student Projects/Papers/Last Thoughts

1. January 10 Introduction to Course

Guest Panel: Emerging Venture Analysts -Why should MBAs know about Energy Efficiency?

Readings:

Can I Clean Your Clock?

<http://www.nytimes.com/2009/07/05/opinion/05friedman.html>

McKinsey Report:

<http://besustainable.pbworks.com/f/McKinsey+Quarterly+How+the+world+should+invest+in+energy+efficiency.pdf>

2. January 17 Energy Basics: Generation, Distribution, Transmission, Utilization, Regulation

Guest Speaker: Eric Markell, Sr. VP and Chief Strategy Officer, Puget Sound Energy

US Energy Regulations Overview [http://www.wikinvest.com/concept/U.S. Energy Regulations](http://www.wikinvest.com/concept/U.S.+Energy+Regulations)

California Energy Commission - Browse sections <http://www.energy.ca.gov/>

Read about the various forms of renewable energy

http://www.eere.energy.gov/basics/renewable_energy/index.html

US Energy Policy after Japan: If Not Nuclear, Then What?

<http://knowledge.wharton.upenn.edu/articlepdf/2743>

[.pdf?CFID=161071018&CFTOKEN=62781866&jsessionid=a830b5ae660e178526463521222ff32267c6](http://knowledge.wharton.upenn.edu/articlepdf/2743.pdf?CFID=161071018&CFTOKEN=62781866&jsessionid=a830b5ae660e178526463521222ff32267c6)

Decoupling Policies, <http://www.nrel.gov/docs/fy10osti/46606.pdf>

Read design elements of CARB cap and trade policy

<http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

2. January 24 Energy Efficiency: Costs and Benefits, Incentives and Barriers

Guest: Aaron Singer, CEO Pacific Carbon Exchange <http://www.pcarbx.com/>

Altering Planes and the Way They Fly, to Save Fuel

http://www.nytimes.com/2009/04/30/business/energy-environment/30aviation.html?_r=1&ref=businessspecial2

Energy Efficiency in Buildings: World Business Council Report

<http://www.wbcsd.org/includes/getTarget.asp?type=d&id=MjU5MTI>

The Bumpy Road to Net Zero Energy

http://www.eceee.org/eceeeorg/columnists/Alan_Meier/the-bumpy-road-to-net-zero-energy

Putting Energy Hogs in the Home on a Strict Low-Power Diet

<http://www.nytimes.com/2007/06/14/technology/14basics.html?ref=technology>

Boosting the Economy with Energy Efficiency Financing

http://www.iea.org/papers/2009/ee_financing.pdf

An Evangelical Crusade to go Green with God

<http://www.npr.org/templates/story/story.php?storyId=128130198&sc=17&f=1001>

Creating a California Energy Efficiency Market

<http://www.pcarbx.com/PressDownloads/PcarbXEECMktPlanPrecis.pdf>

3. January 31 Energy Efficiency: Community Challenges and Opportunities

Guests: Ben Finkelor, Exec Director UC Davis EEC **and** Elisabeth Brinton, Director Communications & Community Relations, Sacramento Municipal Utility District **CLASS WILL MEET AT WEST VILLAGE**

West Village opens:

<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2011/10/23/BAK61LK8KM.DTL>

<http://westvillage.ucdavis.edu/>

Net Zero Energy Community

<http://www.nrel.gov/docs/fy10osti/46065.pdf>

5. February 7 Energy Efficiency and Corporate Strategy

Guest: Bill Mitchel, Sr. Director, Partner Strategy & Business Development, Microsoft Corporation

Pew Center Report <http://www.greenbiz.com/sites/default/files/Pew-Center-EE-Report.pdf>

6. February 14 Energy Efficiency, Social Institutions and Social Values

Guest: Kurt Kornbluth, Director UC Davis D-Lab

Energy and the Developing World

https://www.mckinseyquarterly.com/Promoting_energy_efficiency_in_the_developing_world_2295

Social Institutions as Levers

<http://interfaithpowerandlight.org/>

7. February 21 Energy Efficiency as Market Opportunity: Products

CLASS WILL BE HELD AT THE CALIFORNIA LIGHTING TECHNOLOGY CENTER <http://cltc.ucdavis.edu/>

We will have a tour and briefing on the direction of the lighting industry domestically and globally.

8. February 28 Water-Energy Efficiency

Guests: Ned Spang, Program Director UC Davis Water Energy Efficiency Center, and Peter Yolles, CEO and Founder, WaterSmart Software

9. March 6 Energy Efficiency as Market Opportunity: ESCOs

Guest: Jim Davis, CEO Chevron Energy Solutions (Invited)

Readings TBA

10. March 13

Student Projects/White Papers/Final Thoughts