

H A&S 222d Energy and Environment:

Essay 2

out: Fri 10 April 2009

outline and rough draft due: Thurs 16 April (you may submit this on your Google Doc page)

final due: Thurs 23 April 2009

On energy and cities

You have read in McNeill's book and Smil's chapter 3 a broad discussion of the history of human energy use, and some of the effects of industries on air quality in cities. Lectures have so far centered on the science of energy on Earth, its ultimate source in the sun, and its flow into the thermal, mechanical and chemical energy. We are beginning to see the 'energy intensity' that humans appropriate from this flow of energy through the Earth system (e.g., McNeill, p.15).

Write an essay profiling the concentration of human energy use that occurs in cities. You could view this as extending McNeill's chapter 3 (and beginning of chapter 4) to look deeper into the quality and equity of life in cities. Use the web to research a portrait of energy 'flow' in the cities you describe.

Some possible questions: How does the energy profile of a modern city affect the quality of life (contrasted with a city in 1900 or 1800). What energy challenges do cities face in hot countries and cold countries? What are the benefits and problems created by clustering people together? Indeed, what factors lead to concentration of populations? Why do people choose to live in the most crowded cities? Do they fully understand the more subtle health risks? What is the connection between environmental quality (related to energy) and social justice? What kind of 'Nature'...ecosystems beyond humans... can prosper in cities? How is the environmental quality of cities changing ...are there examples of really positive trends in urban design relating to energy and environment?

Use specific examples with some fine detail, rather than relying on general impressions. You could research the 'energy profile' of a city you are familiar with, or of a sub-unit of a city (for example the University of Washington), discussing consumption, efficiency, and possible trends of improvement. Think of the axis of time...for example noting the growth in population, changes in affluence and technology that impact this question. Will cyberspace define the 'cities' of the future, more than physical space?

(no more than 5 pages, 1½ line spacing, font 12 Times New Roman or equivalent)