GEOG 470 Energy, Environment, and Society

STUDY GUIDE

Here is some material that will prove useful in preparing for the final exam.

The final will have open note questions and closed note questions.

More than likely there will be five or six essay questions total.  You will need the entire allocated time of two hours to do your best.

If there are areas of the reading questions that you have not done, probably that will show up in how you are able to respond to the final. So please leave no stones unturned! The following block in blue background has some questions from an earlier class – some questions this year will be quite like these. These and similar questions will be closed note.

Geography 470/570 Final Exam

Based on various chapters in Smil, answer the following question. Describe the various historical changes in how human societies have sourced and transformed their energy supply, beginning with hunter-gatherers and continuing to the present. Document changes in per capita supply and how some societies were able to make the grand transitions. Define and integrate the concepts of solar flows (also known as solar income) and solar capital and how their relative importance has changed through time (very important!). (25 points)

Construct two compelling arguments for the imperative of making a transition away from fossil fuels (especially petroleum) that are not based on the risks of global climate change. (20 points)

Explain why energy flows in society have historically had so much influence on differences in life expectancy, literacy, and democracy. Use examples from at least two continents in addition to North America. (20 points)

Discuss the forces likely to shape a) the degree to which, and b) the speed in which, global civilization will make a transition in this century from being based mostly on solar capital to being based mostly on solar flows. Utilize concepts from Smil and Friedman. (20 points)

Here are some other possible questions that are likely to be closed note:

Global oil prices:

1. Summarize all forces that are likely to influence the global price of oil over the next 50 years.
2. Then state whether you believe oil will be more expensive, or less expensive (in inflation-adjusted terms), than it is now, and drawing from what you wrote in part a), why you believe this.

Summarize each of the various types of arguments for and against making a transition from fossil fuels to solar-based types of energy.

Climate Change and Justice: The climate change report identifies which types of countries are likely to be the least able to adapt to climate change impacts. Summarize and explain why.

Following from the previous question, consider that: a) The developed countries (Europe, North America, Japan, Australia) have emitted most of the anthropogenic carbon dioxide that is in the atmosphere today, in part due to higher per capita emissions over the past century. These emissions were an unintended consequence of the high standard of living that fossil fuel combustion made possible. b) However, the developing countries are now emitting more total carbon dioxide per year than the developed countries, even though per capita emissions remain substantially higher in the developed countries. Due to b), many policy specialists have stated that even if the developed nations take steps to reduce carbon dioxide emissions, such efforts will have little effect because of the continued growth and magnitude of emissions from the developing countries. Describe why a) can be considered to be a form of environmental injustice, and propose policies for how to slow and eventually reverse greenhouse gas growth in the atmosphere.

There will be numerous short answer questions where you will be allowed to use your notes.