

Policy Background Papers

The material of this course provides scientific background for analysis of a wide range of energy policy problems related to social, economic, and political issues. To see that connection more clearly, you are asked to write a paper presenting the science that sets the boundaries for what can be done in a particular area of energy policy. A number of examples of possible topics are listed below; these are intended solely to start you thinking, and by no means define the range of possibilities. No matter what topic you choose, the emphasis should be on the *scientific* setting that constrains the value or practicality of possible policies.

The paper will be due Monday, November 22, 2010. I encourage you to come and talk to me if you have questions about how to choose a topic.

Sample Topics

Net energy balance of biofuels at the present state of technology

What might be done to tilt the energy balance of biofuels more favorably

Carbon sequestration

Nuclear waste storage

Internal mechanisms of batteries and current research to improve stored energy/mass

What exactly is a “smart electrical grid”?

Critique any of MacKay’s policy recommendations

Insulating properties of windows: heat conduction, light transmittance

What limits the coefficient-of-performance of heat pumps?

Exotic energy storage methods (compressed air, flywheels, etc.)

Minimizing non-solar energy inputs in houses

What limits fuel efficiency in vehicles? (Choose cars or trains or airplanes)