

Physics 4960H

Professor Daniel Cronin-Hennessy

- Pepin's charge to me upon taking on this course :

“You can do anything you want!”

OK then...

A physicist's view

- Energy
 - Quantify
 - Work = Force applied over a distance
 - Types
 - Potential, Kinetic, Mass...
 - Why is $\frac{1}{2} m v^2$ such a useful quantity?
- Conservation of energy \rightarrow symmetry

Other perspectives on energy?

- Energy
 - Heats my house.
 - Makes my car go.
- Available energy:
 - The wet towel analogy.
- What do people think scientist are doing about energy issues?
 - George Costanza's flying cars.
 - Laura Fermi's childrens book.

A Proposal

- Step away from the pure physics perspective.
- Explore energy and society.
 - With the goal of providing a “fact sheet” for scientists.
 - WEB page seems a reasonable product.
- The function of the seminar class is more along the lines of a study group (for 1st half).
- Later in the semester (2nd half) presentations will be made as an advocate of a specific technology.

Can we quantify energy issues?

- Energy Consumption:
 - By nation.
 - Industry versus individual.
 - What are the largest consumers?
 - Future projections.
- Energy Distribution
 - Should future technologies be limited to those that can use the current distribution system.
 - What do other systems look like? What are pros and cons.
- Energy Storage
 - Battery technology.
 - Fuel cells.

Can we quantify energy issues?

- Energy sources and technologies
 - Oil, natural gas, coal
 - Wind, water and sun
 - Bio
 - Fission, fusion
 - Let's avoid fringe topics.
- What is the supply for these? Upfront costs?
Environmental impact?
- Energy conservation
 - What is reasonable to expect from consumers?

Can we quantify energy issues?

Presenting the data:

Factoids:

Can we compare an area of corn to an equal area of solar panels?

Presenting info (radical example): How many Hiroshima bombs equivalent is an increase of 3 degrees in the global temperature?

How much are nations investing in various technologies?

Questions we must start answering today?

What is our goal?

An energy resource for a user with some technical or science background.

How do we begin to structure our approach?

By energy sources or by the categories as I presented?

How do we organize?

Need an agenda each meeting. 1 person each week.

We need assignments and need to track these.

Some one writes minutes? 1 person each week

What is our product?

I proposed a WEB page.

We take turns updating. 1 person each week.

I need someone to create the first page.