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NPRE 470 - Miley
Lecture Notes: 01-18-2011

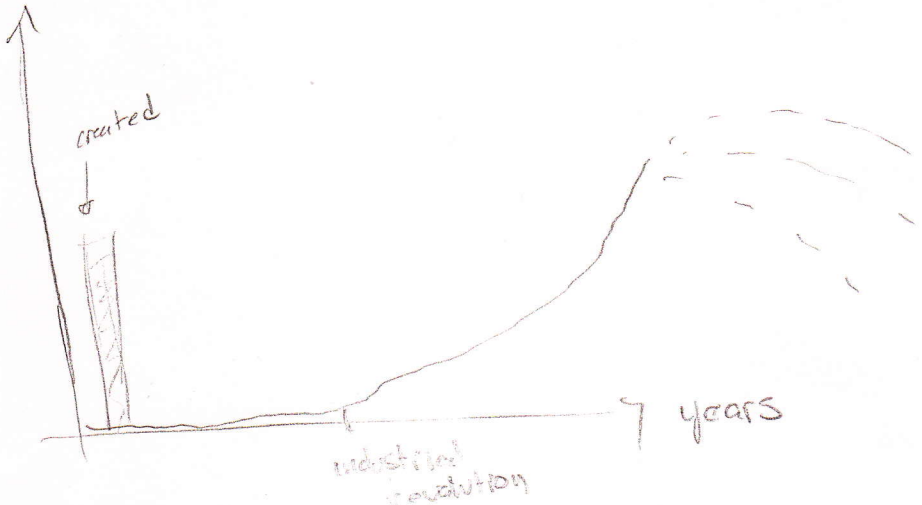
- Professor Miley talked about his recent visit to Hawaii for a symposium in regards to Hawaii's energy problems. Hawaii is aiming for dependence on renewable energy such as thermal ocean, geothermal, wave power, solar, etc. Hawaii's current problem with energy is the lack of sufficient energy reserves. Since they use a lot of solar energy, on a cloudy day Hawaii depends on its reserves for backup and there just doesn't seem to be enough energy in them.

- There was also a discussion about the original "Futuregen" project, which was supposed to use a practically emission-free coal burning plant that implements oxy-combustion technology. Matoon, Illinois was supposed to be the waste storage site for the project but according to Professor Miley, the people of Matoon opposed the idea of their city being a wasteland so the project was scratched the day of the contract. According to Departments of Energy's website, plans for Futuregen 2.0 were announced on August 5, 2010 for continuance as originally planned in Matoon, and also to direct funds towards Ameren's 200 megawatt plant in Meredosia, Illinois to be the plant to use the Oxy burning technology.

    - Oxy combustion burns coal with a mixture of oxygen instead of air to produce a thicker more concentrated CO2 stream for permanent, safe storage.

- A pipeline network will be established from Meredosia to Matoon for the transportation of over a million tons of yearly captured CO2.
- The project is expected to create a lot of jobs.
- If all goes well, the U.S should be the world's leaders in CO2 capture.

- We took a look at the following graph relating time in years to the use of fossil fuels.



- Lastly, we spoke about laws that have been passed that require some power plants (i.e, Nuclear) to make use of cooling towers to hold water used as coolant by the plants before dumping it back into rivers. This is to minimize environmental damage to rivers caused by the elevated river temperatures which in turns ends up killing natural life.