

Ch 16: Renewable Energy Alternatives (& a little from 15...)

What is **energy conservation** (ch 15, pp 354-356)? U.S. history w/ respect to it? **OPEC** embargo, **CAFE** standards.

What are **two** (2) routes to conservation? What is **cogeneration**?

What are the **seven** (7) **alternative energies** from this chapter? **Define each** of them. **Explain** how they “work”. What are the **advantages/benefits, disadvantages/limitations** of each of them? (*hint*: you may want to check your classmates’ work against the information provided in the text). Which is the **fastest growing** renewable?

For what **two** (2) reasons do we need to look to alternatives to fossil fuels? What are the **benefits** of renewables? What are the **challenges/obstacles** to adoption of renewables as our primary energy supply? What might help us “**accelerate**” our transition? And, who is that **Stanford** guy?

Some basics/background on **energy** – refer to Ch 2 section, “**Energy Fundamentals**” (pp. 30-31) For example, *potential, kinetic, chemical, first and second laws of thermodynamics, radiation, and e-m spectrum*. Also, review **electricity** and **EROI** from Ch 15 (pp. 334-336)

Ch 6: Human Population

Is **China’s One-Child Policy** a success? Quantitatively? Qualitatively? (*Why or why not?*)

Is global population growing? If so, where is most of global population growth occurring?

How many people are added to the global population *annually*? Every *second*?

What is the current global population growth rate (**PGR**)? Is PGR stable/unchanging? What is **exponential growth**?

How is population **doubling time** determined? What does the **IPAT(s)** model tell us? What is **demography**?

What is the **U.S.** population? **China’s** population? China’s TFR?

What are the general characteristics of human population **density & distribution**?

What do the shapes of **age structure diagrams/population pyramids** tell us about future population growth?

What is total fertility rate (**TFR**)? What is **replacement fertility**? What factors drive down TFR?

What is **Notestein’s Demographic Transition** Model? What are its four stages? What happens to **Birth Rate, Death Rate & Population**?

What is meant by “**empowerment of women**”?

What is the significance of the **1994 UN Population Conference** in Cairo, Egypt? What does “**The World’s Population Explosion**” Nightline episode (video) tell us?

Link between population growth and wealth. Where will future growth be?

What is the “**wealth gap**” (inequitable distribution of wealth)?

What are the **two** major reasons for optimism suggested by the textbook authors?