The Energy Chain and Market (Part 1) (October 26 Session)

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ENERGY DEMAND

• What factors contribute to the growing demand for energy in our world?
• What is the trend of energy intensity (i.e., the growth rate of energy use versus the growth rate of gross domestic product)?
• Would it matter if we used total output instead of GDP?
ENERGY SUPPLY

• What is the current share of energy supply from:
  1. fossil fuel
  2. renewable energy
  3. nuclear energy?

• What are the future supply trends?
FOSSIL FUELS & RENEWABLE ENERGY

• How do each of the following issues challenge the use of traditional fossil fuels (oil, natural gas, and coal):
  1. depletion of fossil fuel reserves
  2. global warming
  3. energy security
  4. rising energy costs

• How does their use affect economic growth?
• What are the advantages of renewable energy (solar, wind, biomass, wave and tidal energy, etc.)?
• What are some of the obstacles in switching from using fossil fuels to using renewable energy?
DIFFERENCES AMONG COUNTRIES


• What are the differences among crucial energy economies in terms of (1) the size of energy consumption, (2) dependency on energy imports, and (3) potentials for use of renewable energy:
  1. China
  2. India
  3. Russia
  4. United Kingdom
  5. United States
ENERGY CONSUMPTION

National Petroleum Council (2007): Facing the Hard Truth About Energy

• In what areas and by what means can energy consumption become more efficient? Think about it in terms of the perspectives of:
  1. vehicle transportation
  2. commercial and residential consumption
  3. industrial sector
  4. electric generation
ENERGY DELIVERY

• The energy supply system includes the physical store of a particular source, production or conversion of the resource to a usable form, and delivery of products to consumers.

• What are some issues facing infrastructure for energy conversion and delivery? Think about this in terms of the international petroleum trade.
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To view the figure, go to page 163 of “Facing The Hard Truths About Energy: A Comprehensive View to 2030 of Global Oil and Natural Gas”.

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