Overview

- Basic concepts of public policy
- Basic economic concepts

What Is Public Policy?

- Publicly preferred/chosen direction of society
- Results in government policies, investments, laws and regulations

What Is Public Policy?

- Often counteracts with force of free market → Need for public economics
- Often a long process to reach implementation

Public policy and energy issues

- Policy analysis 
  - e.g., effectiveness of tradable pollution permit
- Public administration 
  - e.g., power politics between govt. institutions
Studies of public policy and energy issues

- Urban/regional planning
  - e.g., siting and specifying power plant
- NPO/NGO management
  - e.g., management of non-profit environment

Seriousness of energy problems

- Energy issues create not only global but also local problems.
  - Energy is necessary for all living species.
  - E.g., climate change involves all nations. They are different in politics, culture, economy, the amount of carbon-emitting activity, and energy resources.
  - E.g., Local energy generation requires many strategic decisions aiming at the growth of local economy, e.g., whether to own a generator, where to locate it and type, source and price of fuel.

Outlook of world total primary energy supply by fuel type

- Fossil fuels continue to increase.

Outlook of world total primary energy supply by region

- Increased share in developing nations

World population

- There is a likelihood of the world population doubling in the 21st century.

Energy consumption is directly related to economic development.

- Energy is one of the major problems that divide developing and developed nations.
- Continuous economic growth may not be possible for the earth to sustain the rapidly increasing population.

Source: International Energy Agency 2000

Unit: Mtoe

1 GWh = 11,630 Mtoe

What is economics?

- Studies of “choices”
- “Actors”: individual, firm, government, etc.
- Implication: “scarce resources”

What is economics?

- “Markets” exist where the choices are made and where “trading” takes place
- Theories and models make it a social science.

Rationale of Trading

Production possibility curves for two nations. A to B increases total production in either case, but the curves have a different response to change.

What is microeconomics?

- Small scale
- Studies of behavior of the actors
- EG, study of different energy supply options as exercised by the actors
What is macroeconomics?

• Large scale
• Studies of behavior of economies
• Example: overall energy situations in different countries

What is public economics?

• “Market” has been traditionally free, e.g., a village market.
• Sometimes needs public involvement
• When and how should “government intervention” take place?
• To balance “efficiency” and “equity”

What is environmental energy economics?

• Attempts to quantify conventionally not quantified qualities
• Unfortunately, infinite value meant almost zero dollar value.

Rationale for a focus on microeconomics for energy

• To compare different choices available.
• Belief that the economy depends on energy inputs, i.e., micro-to-macro feedback is sought.

Typical assumptions

• Actors are rational.
  Consumers are “utility”-maximizing.
  Producers are “cost”-minimizing and “profit”-maximizing.
• Information is complete.
• Complete competition
• For our convenience, choices are made between two products.

Production possibility curve

Budget constraint of society
Inverse demand curve
- Inverse of amount demanded versus price.
- Expensive item is less affordable.

Inverse supply curve
- Inverse of amount supplied versus price.
- More profitable to produce expensive item.

Equilibrium
- Intersection of demand and supply curves.

Demand curve shift
- Market Demand and Curve, 1990
- Market Demand and Curve, 2000

Supply curve shift
- 1990 Supply Curve
- 1995 Supply Curve

Price Elasticity
- Sensitivity to change in price.
- Different between different kinds of products.
- Price elasticity of supply = Flatness of inverse supply curve.
- Price elasticity of demand and = Flatness of inverse demand curve.
**Price elasticity of supply**

- Which is more elastic oil or chicken?
  - "Inelastic" = vertical supply curve
  - "Perfectly elastic" = horizontal supply curve

**Price elasticity of demand**

- Which is more elastic milk or ice cream?
- Elasticity may depend on quantity.

**Price elasticity of demand**

- Demand and supply are dynamic.
- Elasticity may differ by different time scales.
- Would it be more elastic in the long run?

**End of Module 04-01**