DEPARTMENT OF ECONOMICS
DELHI SCHOOL OF ECONOMICS
UNIVERSITY OF DELHI
Minutes of Meeting

Subject : B.A (Hons.) Generic Elective Economics, Semester III/V/VII
Course : Basic Resource and Energy Economics (GE -12) - ECON 066
Date of Meeting: Friday 11th August, 2023, 3.30 P.M
Venue : Room no. 104
Convenor : Dr Swati Saini

Attended by:

1. Dr Swarup Santra — Satyawati College

Learning Objectives

This course will introduce the basics of Resource and Energy economics. The objective of this course is to provide theoretical and empirical topics on Resource economics, energy economics, energy transition, and energy security. This course introduces the conceptual and theoretical foundations of Resource Economics.In particular, the policies and potential sources are both renewable and non-renewable. The objective of this course is to provide knowledge on the principles of governing and managing natural resources.

Learning outcomes

The students will learn some issues of resource economics relating to the basics of supply, demand, and prices, income elasticities, world oil markets, and depletable resources, pathways of energy transition from conventional to renewable energy sources.

Syllabus

Unit 1: Resource Economics (Renewable and non-renewable sources) 15 lectures

Optimal extraction of non-renewable resource, Optimal management of renewable resources -Fishery and Forestry

Tom Tietenberg and Lynne Lewis, Environment and Natural Resource Economics, 9th edition, Chapter 5,6,12 and 13

Unit 2: Energy Economics 15 Lectures

Review of the Basics of Supply, Demand and Price Formation in Competitive Markets.Types of energy sources, Introduction to Basics of supply, demand, and prices, income elasticities, energy supply and economics of depletable resources, world oil markets.

Pindyck and Rubinfeld. 2005, chapter 2, section 15.8.

Smil, V. "Energy in the Twentieth Century: Resources, Conversions, Costs, Uses and Consequences." *Annual Review of Energy and the Environment* 25 (2000): 21-51.

Fouquest, R., and P. Pearson. "A Thousand Years of Energy Use in the United Kingdom." *The Energy Journal* 19, no. 4 (1998): 1-41.

Hughes, J., C. Knittel, and D. Sperling. "Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand." Center for the Study of Energy Markets, Working Paper 159 (2006).

Krautkraemer J., and M. Toman. "Fundamental Economics of Depletable Energy Supply." Resources for the Future, Discussion Paper 03-01 (2003).

Smith, J. "Inscrutable OPEC? Behavioral Tests of the Cartel Hypothesis." The Energy Journal 25, no. 1 (2005): 51-82.

Unit 3: Energy transition and energy security **15 Lectures**

Pathways of energy transition from conventional to renewable energy sources, Policy instruments, Energy security, accessibility and 4 A definition, and Energy poverty

Fouquet, R. Historical energy transitions: speed, prices and system transformation. Energy Res. Soc. Sci. 22, 7–12 (2016).

McGowan, J., and S. Conners. "Windpower: A Turn of the Century Review." Annual Review of Energy and the Environment 25 (2000): 147-197.

Chen, B., Xiong, R., Li, H., Sun, Q., & Yang, J. (2019). Pathways for sustainable energy transition. Journal of Cleaner Production, 228, 1564-1571.

Palmer, K., and D. Bullaw. "Cost-Effectiveness of Renewable Electricity Policies." Energy Economics 27 (2005): 873-894.

Deffeyes, K. Hubbert's Peak: The Impending World of Oil Shortage. Princeton, NJ: Princeton University Press, 2001, chapter 1. ISBN: 0691116253.

Lynch M. "The Pessimism About Petroleum Resources: Debunking the Hubbert Model (and Hubbert Modelers)." Minerals and Energy - Raw Materials Report 18, no. 1 (2003): 1-18.

Watkins, G. "Oil Scarcity: What Have the Past Three Decades Revealed?" Energy Policy 34 (2006): 508-514.

Cherp, A., & Jewell, J. (2014). The concept of energy security: Beyond the four As. Energy policy, 75, 415-421.

Carley, S., & Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. Nature Energy, 5(8), 569-577.

Assessment:

1. Internal evaluation will comprise one class test (10 marks) and (5 marks) for attendance. The remaining (10 marks) evaluation may be done by case study submitted and presented by students in class in form of real examples as case study applications of the theory taught in the course.

2. The end-semester exam (75 marks) will comprise numerical and other questions.