

Energy Studies Programme
School of International Studies
Jawaharlal Nehru University

Course	:	Ph.D.
Course No.	:	EG611
Course Title	:	Energy: Concepts, Policies and Politics
Course Type	:	Optional
Course Teacher	:	Prof. Atul Kumar
Credits	:	4
Semester	:	Monsoon
Course Duration	:	One Semester
Contact Hours	:	4 hours per week
Teaching Method	:	Lectures and Discussions
Evaluation Method	:	Class Performance/Assignments/ End Semester Test

Course Rationale

Defined as “the capacity of a system to do work” in physical sciences, 'Energy' refers to the mix of fuel types that run the economic engine of any country in international politics and policy studies. As today's commonly used commercial energy sources are unevenly distributed among different geographical locations, energy used by any country demands greater cooperation and more substantial interdependence among economies. The exploration, production, transportation, usage and waste processing of energy sources and the generation and transmission of electricity often involve trade and interaction of more than one country. The environmental impacts of energy-related emissions and the public concerns about using specific fuel sources are also critical issues beyond the geographical borders of any single country. Further, the growing demand for renewable sources and clean energy technologies are already influencing regional and multilateral collaborations and making way for cooperation and competition among countries. Energy studies is an interdisciplinary field and are the confluence of studies of fuel sources, international politics, foreign policy, technology, economics, environment, market dynamics, society and legal aspects.

Course Objectives

The objective of this course is to equip students with detailed knowledge of energy resources and pertinent trends along with the national and global energy policies and energy-climate change linkages. This course provides students with an overall context for understanding both the domestic and global energy sector landscape and how it impacts international relations.

Learning Outcomes

The learning outcomes expected from this course include:

- Examine and assess the role of energy sector developments in influencing international relations.
- Analyse the interlinkages between energy and climate change from an Indian and international standpoint
- Evaluate global energy policies and its implications for India

Course Content

Unit 1: Fundamental Concepts of Energy

This component will cover energy as a system, classification of energy resources, and distinctions between primary energy, secondary energy, and final energy demand. The component will also discuss energy accounting frameworks, the stock and flow of energy resources, the concept of energy balance, load factor and load curves.

Unit 2: Units and Measures of Energy:

This component will discuss the key units and measures commonly used in the energy sector.

Unit 3: Introduction to Energy Resources

This component will introduce various fuel sources, including fossil fuels, renewable energy sources, technologies, and nuclear energy.

Unit 4: Energy in Domestic and External Policy

This component will focus on energy as a factor in domestic and external policy. Making of energy policy in the backdrop of market trends, geopolitics, resource security, the resource curse and energy nationalism will be discussed

Unit 5: Global Energy Industry and Market

This component will discuss the key aspects related to the global energy market and industry players, commercial competition in different geographic settings, the search for energy security and the competition among import-dependent economies

Unit 6: Energy and Climate Change Linkages

This component will discuss the energy and the climate change dimension, climate change and equity, international response to climate change, India's responses to climate change

Reading List

- Adelman, M.A. and Conant, M.A., 1984. Sense and Nonsense about World Oil. *The Energy Journal*, 5(1), pp.169-172.
- Adelman, M.A., 1985. An unstable world oil market. *The Energy Journal*, 6(1), pp.17- 22.
- Bhattacharyya, S.C., 2011. *Energy economics: concepts, issues, markets and governance*. Springer Science & Business Media.
- Blair, JM., 1976. *Control of Oil*, Macmillan Press
- Block K., (2009). *Introduction to Energy Analysis*, Techne Press.
- Božić, F., Karasalihović Sedlar, D., Smajla, I. and Ivančić, I., 2021. Analysis of Changes in Natural Gas Physical Flows for Europe via Ukraine in 2020. *Energies*, 14(16), p.5175.
- British Petroleum, 2021. *BP statistical review of world energy 2021*. BP Plc, London, United Kingdom
- Calder, K.E., 1996. Asia's empty tank. *Foreign Affairs*, pp.55-69.
- Cherp, A. and Jewell, J., 2014. The concept of energy security: Beyond the four As. *Energy Policy*, 75, pp.415-421.
- Fnedman, T.L., 2006. The first law of petropolitics. *Foreign Policy*, 154(3), pp.28-36.
- Gallopin, G.C., 2006. Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, 16(3), Pp.293-303.
- IEA, 2004. *Energy Statistics Manual*, International Energy Agency (IEA), Accessed on 12 January, 2017 at: http://ec.europa.eu/eurostat/ramon/statmdnuals/files/Ene..gy_Statistics_manual_2_004_EN.pdf
- IEA, 2020 *World Energy Balance*, International Energy Agency (IEA), (IEA), Paris, France.
- IEA, 2021, *Key world energy statistics 2021*, International Energy Agency (IEA), Paris, France.
- Jansen, J.C. and Seebregts, AJ., 2010. Long-term energy services security: What is it and how can it be measured and valued?. *Energy Policy*, 38(4). pp.1654-1664.
- Klare, M., 2002. *Resource wars: the new landscape of global conflict*. Macmillan.
- Klare, M., 2009. *Rising powers, shrinking planet: the new geopolitics of energy*. Macmillan.
- Klsel, E., Hamburg, A., Harm, M., Lepplman, A. and Ots, M., 2016. *Concept for Energy Security Matrix Energy Policy*, 95, pp.1-9.
- Kumar A., 2011. *Growth, sustainable development and climate change: friends or foes?* Utrecht University, Netherlands.
- MoC, 2022, *Coal Director of India 2020-21*, Ministry of Coal (MoC), Government of India, New Delhi, India.
- MoPNG, 2022, *Indian Petroleum and Natural Gas Statistics 2020-21*, Ministry of Petroleum and Natural Gas (MoPNG), Government of India, New Delhi, India
- Pachauri, R.K., Allen, M.R., Barros, V.R., Broome, J., Cramer, W., Christ, R., Church, J.A., Clarke, L., Dahe, Q., Dasgupta, P. And Dubash, N.K., 2014. *Climate change 2014: synthesis report. Contribution of working groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC)*

- Pant, G., 2007. Energy security in Asia: the necessity of interdependence. *Strategic Analysis*, 31(3), pp.523-542.
- Sorensen, B., 1975. Energy and resources. *Science*, 189(4199), pp.255-260.
- Tanner, T. and Allouche, J., 2011. Towards a new political economy of climate change and development. *Ids Bulletin*, 42(3), PP.1-14.
- TERI 2020, TERI Energy & Environment Data Diary and Yearbook 2020/21, The Energy and Resources Institute (TERI), New Delhi India.
- Thaker, J. and Leiserowitz, A., 2014. Shifting discourses of climate change in india. *Climatic Change*, 123(2), PP.107-119.
- UN. 1991. *Energy Statistics: Definitions, Units of Measure and Conversion Factors*, New York, Accessed on 8 January 2017 at: http://unstats.un.org/unsd/publication/SeriesF/SeriesF_44E.pdf
- United Nations, 1992. *United Nations Framework Convention on Climate Change*. New York, United Nations, General Assembly.
- Yergin, D., 1990. *The prize: The epic quest for oil, money & power*. Simon and Schuster.
- Yergin, D., 2006. Ensuring energy security. *Foreign Affairs*, pp.69-82.
- Yergin, D., 2011. *The quest: energy, security, and the remaking of the modern world*. Penguin.