

School of International Studies
M.A. (IRAS) Programme
Jawaharlal Nehru University

Course Number	IA- 413
Course Title	Energy and Environmental Issues (Core)
Course Teachers	Prof. Atul Kumar and Dr Nalin Kumar Mohapatra
Course Credits	4
Semester	Winter
Instruction Method	Lectures. Seminars/Tutorials
Evaluation Method	Sessional Work and Semester Examination
Course Duration	One Semester
Contact Hours	4 per week

Course Description

The environmental ramifications of hydrocarbon-based energy systems have redefined the energy security debate. It has moved Energy beyond a security perspective. While countries do look at energy in terms of supply-demand security, at a systemic level, the issues have become much larger. With local economies becoming part of the global production network, the local energy consumption no more remains local, on the contrary, it becomes part of global consumption. With energy and environment moving to global common, the power dynamics is redefining the relations among the nations. India being one of the largest importers of energy, is also playing an important role in the global energy transition in the context of renewable energy. Similarly, India also provides a voice to the Global South in the climate negotiation forums.

In a nutshell, the debate revolving around climate change and energy security interaction provides four conceptual dilemmas which global politics is confronting today. These are: a) how to address the question of equity in international relations through the lens of energy securitisation?; b) is the move towards energy transition aimed at addressing climate change at the global level?; c) examining a synergy between climate change and energy securitisation; d) to what extent existing international mechanisms are able to address the question of the energy securitization process and climate change.

Course Objectives

The objective of the course is to understand the complex linkages between energy and the environment, both in terms of the tension between energy poverty and energy security and the limitation of energy resources in mitigating energy poverty at the national and global levels. The course also aims to provide both a conceptual understanding of energy security and climate change along with its repercussion on global politics at an empirical level. While bringing out such linkages, the issue of energy securitisation will be the core point of analysis. At the same time role of international energy institutions will be examined in detail to understand the phenomenon. Similarly, India's pro-active role in global energy discourses will be discussed at length.

Learning Outcomes

After completing this course, students will be able to:

- Identify and distinguish between various renewable and non-renewable energy sources.
- Evaluate options for energy supply, distribution and utilization.
- Will have a conceptual understanding of the notion of energy security and climate change interaction.
- Can able to highlight the intricacies of energy transition and its implications for the global energy market.
- Evaluate the role and significance of energy governance mechanisms in addressing climate change and energy security issues.
- Understand India's perception of global energy structure so also to the issues relating to energy transition and climate change.

Course Contents

1. Introduction to Energy Analysis (AK)
2. The Global Energy Landscape: Demand, Supply, and Prices (AK)
3. Energy Security: Concept and Debate (NM)
4. Renewable Sources of Energy (AK)
5. Energy Transition: The Global-Local Interface (NM)
6. Energy and the Emerging Global Order (NM)
7. The Geopolitics of Energy (NM)
8. Energy and Climate Change Linkages (AK)
9. Global Energy Governance: Issues and Challenges (NM)
10. India and Global Energy Issues: Climate Change and Renewable Energy Transition (AK)

Reading list

Alhajji, A. F. (2008). What is energy security? Definitions and concepts. *Oil, Gas & Energy Law*, 6(3).

Blok, K., & Nieuwlaar, E. (2016). *Introduction to energy analysis*. Routledge.

British Petroleum (2021). *BP Statistical Review of World Energy 2021*. BP Plc, London, United Kingdom

Chaukri, Nazli. (1980). Power and politics in world oil. *Technology Review* 8(7) 24-36.

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

Chester, L. (2010). Conceptualising energy security and making explicit its polysemic nature. *Energy Policy*, 38(2), 887-895.

- Chevalier, J. M. (2009). *The new energy crisis*. In *The New Energy Crisis* (pp. 6-59). Palgrave Macmillan, London.
- Dalby, S. (2013). The geopolitics of climate change. *Political Geography*, 37, 38-47.
- De Soysa, I. (2015). Oil and the ‘new wars’: another look at the resource curse using alternative data. *Development Studies Research*, 2(1), 64-76.
- Dorian, J. P., Franssen, H. T., & Simbeck, D. R. (2006). Global challenges in energy. *Energy Policy*, 34(15), 1984-1991.
- Dubash, N. K. (2011) “From norm taker to norm maker? Indian energy governance in global context”, *Global Policy*, 2, 66–79.
- Eyring, V., Gillett, N. P., Achutarao, K., Barimalala, R., Barreiro Parrillo, M., Bellouin, N., ... & Mitchell, D. (2021). Human Influence on the Climate System: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC Sixth Assessment Report.
- Gallopín, G. C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, 16(3), 293-303.
- Goldthau, A., & Witte, J. M. (Eds.). (2010). *Global energy governance: The new rules of the game*. Brookings Institution Press. Washington.
- Graaf, T. V. D., & Zelli, F. (2016). Actors, institutions and frames in global energy politics. In *The Palgrave handbook of the international political economy of energy* (pp. 47-71). Palgrave Macmillan, London.
- Grätz, J. (2012). Unconventional resources: The shifting geographies and geopolitics of energy. In *Strategic Trends 2012* (pp. 79-102). Center for Security Studies (CSS), ETH Zürich.
- IEA (2004). *Energy Statistics Manual*. International Energy Agency (IEA),: [http://ec.europa.eu/eurostat/ramon/statmdnuals/files/Ene..gy Statistics manual 2 004_ EN.pdf](http://ec.europa.eu/eurostat/ramon/statmdnuals/files/Ene..gy%20Statistics%20manual%20004_EN.pdf)
- IEA (2020). *World Energy Balance*, International Energy Agency (IEA), (IEA), Paris, France.
- IEA (2021). *India Energy Outlook, 2021*. International Energy Agency (IEA), Paris, France.
- IEA, 2021, Key world energy statistics 2021, International Energy Agency (IEA), Paris, France.
- Klare, M. T. (2008). From scarcity to abundance: the new geopolitics of energy, *Current History*, 116,(786,) 3-9
- Kumar, A. (2011). *Growth, sustainable development and climate change: friends or foes?*. Universiteit Utrecht.
- Le Billon, P. (2004). The geopolitical economy of ‘resource wars. *Geopolitics*, 9(1), 1-28.
- Le Billon, P., & Cervantes, A. (2013). Oil Prices, Scarcity, and Geographies of War. *Annals of the Association of American Geographers*. 99(5), 25-33.
- MoC (2022). *Coal Director of India 2020-21*. Ministry of Coal (MoC), Government of India, New Delhi, India.
- Mohapatra, N.K. (2020). Climate Change, Energy Security and Societal Vulnerability in Eurasia, *Journal of Climate Change*, 6(2), 1-14.

- Mohapatra, N.K. (2018). Energy security and pattern of regional conflicts in Eurasia: From a constructive framework of analysis, *Cambridge Journal of Eurasian Studies* v. 2, <https://access.portico.org/Portico/auView?auId=ark%3A%2F27927%2Fphz98k7pffg,1-23>
- MoPNG (2022). *Indian Petroleum and Natural Gas Statistics 2020-21*. Ministry of Petroleum and Natural Gas (MoPNG), Government of India, New Delhi, India
- The International Institute for Sustainable Development and the Council on Energy (2020), Environment and Water, Mapping India's Energy Policy 2022: Aligning support and revenues with a net-zero future Manitoba, Canada. <https://www.iisd.org/system/files/2022-05/mapping-india-energy-policy-2022.pdf>
- Nance, M. T., & Boettcher III, W. A. (2017). Conflict, cooperation, and change in the politics of energy interdependence: An introduction. *Energy Research & Social Science*, 24, 1-5.
- Overland, I. (2016). Energy: The missing link in globalization. *Energy Research & Social Science*, 14, 122-130.
- Pachauri, R. K., & Meyer, L. A. (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.
- Painter, D. S. (2014). Oil and geopolitics: the oil crises of the 1970s and the Cold War. *Historical Social Research/Historische Sozialforschung*, 186-208.
- Pant, G. . (Eds.). (2015) (ed). *India's Emerging Energy Relations: Issues and Challenges*. Springer: New Delhi.
- Pörtner, H. O., Roberts, D. C., Adams, H., Adler, C., Aldunce, P., Ali, E., ... & Fischlin, A. (2022). Climate change 2022: Impacts, adaptation and vulnerability. IPCC Sixth Assessment Report.
- Smil, V. (2016). Examining energy transitions: A dozen insights based on performance. *Energy Research & Social Science*, 22, 194-197.
- Sovacool, B. K. (2011). An international comparison of four polycentric approaches to climate and energy governance. *Energy policy*, 39(6), 3832-3844. Keohane, R. O., & Victor, D. G. (2011). The regime complex for climate change. *Perspectives on politics*, 9(1), 7-23.
- Subhes, S. C. (2011). *Energy Economics: Concepts, Issues, Markets and Governance*. London: Springer-Verlag London Limited.
- Tanner, T., & Allouche, J. (2011). Towards a new political economy of climate change and development. *IDS bulletin*, 42(3), 1-14.
- TERI (2020). *TERI Energy & Environment Data Diary and Yearbook 2020/21*. The Energy and Resources Institute (TERI), New Delhi India.
- Thaker, J., & Leiserowitz, A. (2014). Shifting discourses of climate change in India. *Climatic Change*, 123(2), 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.
- Vakulchuk, R., Overland, I., & Scholten, D. (2020). Renewable energy and geopolitics: A review. *Renewable and Sustainable Energy Reviews*, 122, 109547.

- Van de Graaf, T., & Colgan, J. (2016). Global energy governance: a review and research agenda. *Palgrave Communications*, 2(1), 1-12.
- Wegge, N., & Keil, K. (2018). Between classical and critical geopolitics in a changing Arctic. *Polar Geography*, 41(2), 87-106.
- Wilson, E. J. (1987). World politics and international energy markets. *International Organization*, 41(1), 125-149.
- Wilson, J. D. (2019). A securitisation approach to international energy politics. *Energy Research & Social Science*, 49, 114-125.
- Yergin, Daniel. (2006). Ensuring energy security. *Foreign Affairs*, 85(2), 69-82.
- Yergin, Daniel. (2011). *The Quest: Energy, Security, and the Remaking of the Modern World*, New York: Penguin Press.