

Interdisciplinary Programmes

Academic year 2018 - 2019

Political Economy of International Energy

MINT028- Spring- 6 ECTS

Course Description

The definition of energy sustainability is based on three core dimensions – energy security, energy equity, and environmental sustainability. More frequently than not, these three objectives are mutually contradictory or incompatible. The future of energy thus poses a trilemma, i.e. the need to navigate difficult trade-offs between the three major objectives. Energy – oil, gas, power – remains one of the biggest businesses, and maintains a strategic characterization that sets it aside from other economic sectors. As such, it attracts the attention of industrial, financial and political actors internationally. The course aims at providing students with the critical knowledge and skills to avoid superficial generalizations and simplifications – which unfortunately remain all too common.

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Syllabus

Lecture topics:

1. Introduction – Long-Term Energy Trends
2. Energy scenarios – views of the future
3. The trilemma. Renewable Sources and the issue of intermittency
4. The future of nuclear energy; Coal
5. Hydro and international water politics; Final Uses of Energy
6. CCS and the Carbon Market
7. Natural Gas: Reserves, Production, Technology, Perspectives
8. Geopolitics of Gas
9. International Oil: Reserves, Production, Technology
10. The International Oil Market: Functioning
11. The International Oil Market: the Debate

Pedagogical format

This is an introductory course aiming at providing students with basic background knowledge on energy issues. The course combines power point based lectures with a MOOC and videos of past lectures online.

Course validation

A Midterm and a Final: these are take home exams, handled remotely by email. You will need to write a short essay (500 words) responding to one out of three or four questions that will be proposed.

Course participation: primarily through two forums activated on the MOODLE

Workload

Students must attend class and carefully go over class notes (power point presentations). They must selectively and intelligently absorb material from the extensive reading list. They are encouraged to ask questions and raise issues in class. Students must also absorb the online material, which will not be presented in class.

The course earns you 6 ECTS. Each ECTS represents a minimum of 25 hours of work, so the course **requires a minimum total of 150 hours of work**, of which lectures represent 26 hours. **Over the 13 weeks of the course you should work on average another 9.5 hours per week individually.**

Session Topics

Date	First hour	Second hour	Videos	MOOC	Readings
February 21 14:15 Room A2	Introduction – Long-Term Energy Trends			Week 1	<ul style="list-style-type: none"> • IEA World Energy Outlook 2017: Executive Summary and Chapters 1 & 2 • BP Statistical Review of World Energy June 2018 – Spencer Dale’s analysis pages 3-7 • Vaclav Smil “Energy Transitions” Chapters 1 and 2
February 28 14:15 Room A2	Energy scenarios – views of the future		Lecture of 22.09.2015		<ul style="list-style-type: none"> • IEA World Energy Outlook 2017 Chapter 3 • Royal Dutch Shell “New Lens Scenarios” • ExxonMobil “The Outlook for Energy A View to 2040” 2018 edition • BP Energy Outlook, 2018 edition • EIA International Energy Outlook 2016 Chapter 1
March 7 14:15 Room A2	The trilemma. Renewable Sources and the issue of intermittency		Lecture of 18.11.2014 26.10.2015	Week 6	<ul style="list-style-type: none"> • IEA, World Energy Outlook 2017 - Chapters 6 &7 • IEA ETP 2017 Chapter 2 “Tracking Clean Energy Progress” • WEC <i>World Energy Trilemma: Priority actions on</i>

					<i>climate change and how to balance the trilemma 2015</i> <ul style="list-style-type: none"> • Lion Hirth “The Market Value of Variable Renewables” EUI RSCAS 2013/36 pages 1-5 only
March 14 14:15 Room A2	The future of nuclear energy	Coal	Lecture of 2.12.2014	Week 7	<ul style="list-style-type: none"> • IAEA Nuclear Technology Review 2017 • IAEA Nuclear Energy and Sustainable Development • NEA/IEA “Nuclear Energy Technology Roadmap”, 2015 edition • NEA Small Nuclear Reactors • Andlinger Center for Energy and the Environment, “Small Modular Reactors”, June 2015 • IEA World Energy Outlook 2017 Chapter 5 “The Outlook for Coal” • IEEJ Coal phase out: Revisiting the International Coal Phase-Out Movement • SEI Contemporary Coal Dynamics in Indonesia
March 21 14:15 Room A2	Hydro and international water politics	Final uses of energy		Week 8	<ul style="list-style-type: none"> • Dams and Development: a New Framework for Decision-Making – The Report of the World Commission on Dams November 2000: Chapters 1 and 8 • Various articles from newspapers
March 28 14:15 Room A2	CCS	The Market for Carbon			<ul style="list-style-type: none"> • CEPS “Scanning the Options for a Structural Reform of EU ETS”, 2015 • ERCTS and others <i>2018 State of the EU ETS Report</i> • Schlumberger SBC Energy Institute “Leading the Energy Transition: Bringing Carbon Capture and Storage to Market” Executive Summary • ZEP The Costs of CO2 Capture, Transport and Storage Executive Summary
March 30 14:15 Room A2	Midterm				
April 4 14:15 Room S7	Natural Gas: Reserves, Production, Technology, Perspectives		Lecture of 4.11.2014 (Intro to Natural Gas)	Week 4	<ul style="list-style-type: none"> • IEA World Energy Outlook 2017 – Part B Special Focus on Natural Gas • SBC Energy Institute, “Introduction to Natural Gas”, October 2014

				<ul style="list-style-type: none"> IAI & OCP “The future of natural gas: markets and geopolitics” Chapters 1 and 5
April 11 14:15 Room A2	Geopolitics of Gas	Lecture of 11.11.2014 (Natural Gas Part 2)	Week 5	<ul style="list-style-type: none"> EU Commission “Preparedness for a possible disruption of supplies from the East during the fall and winter of 2014/2015”, Brussels, 16.10.2014, COM(2014) 654 Final EU Commission staff working document, “In-depth study of European Energy Security” Brussels, 28.5.2014, SWD(2014) 330 final Oxford Institute for Energy Studies, “The Political and Commercial Dynamics of Russia’s Gas Export Strategy”, September 2015 GL “EU-Russia Gas Blues” Columbia University Journal of International Affairs,
April 18 14:15 Room A2	International Oil: Reserves, Production, Technology	Lectures of 23.09.2014 30.09.2014 21.10.2014 20.10.2015	Week 2 Week 3	<ul style="list-style-type: none"> IEA World Energy Outlook 2017: Chapter 4 V. Smil, “Oil, a Beginner’s Guide”, Chapters 2 and 3
May 2 14:15 Room A2	The International Oil Market: Part 1	Lecture of 7.10.2014 6.10.2015		<ul style="list-style-type: none"> Mabro “The International Oil Price Regime: Origins, Rationale and Assessment” JEL XI,1 June 2005, pp. 3-20 Platt’s Methodology and Specifications Guide – Crude Oil Bassam Fattouh “An Anatomy of the Crude Oil Pricing System” OIES WPM 40 January 2011
May 9 14:15 Room S7	The International Oil Market: Part 2	Lecture of 14.10.2014		<ul style="list-style-type: none">
May 16 14:15 Room A2	Energy Security			<ul style="list-style-type: none">
May 23 14:15 Room A2	General debate on energy transition			<ul style="list-style-type: none">
May 25 14:15 Room A2	Final			<ul style="list-style-type: none">