

Subject Code	AF5633
Subject Title	Economics of World Energy Markets
Credit Value	3
Level	5
Pre-requisite / Co-requisite/ Exclusion	None
Objectives	<p>Energy is a critical resource for the functioning of a modern economy. The energy-environment-economy interactions are now of increasing importance to businesses, policy makers and civil societies. This course explores the theoretical and empirical perspectives on the demand for energy at sectoral and country levels, energy supply, energy markets, and public policies affecting energy markets. It discusses aspects of crude oil, natural gas, coal, electricity, renewable and nuclear energies, and examines energy-related issues like energy security and greenhouse gases emissions (Programme Outcome 2).</p>
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. Understand the economic principles underlying energy supply and demand; b. Describe the historical and contemporary issues related to energy in China and globally; c. Explain basic energy market dynamics, with a focus on how consumers and producers respond to policies and prices; d. Apply economics and finance principles to the analysis of specific energy industries and policy issues; e. Demonstrate awareness of the ethical implications and considerations involved in the economic approach to understanding energy markets.
Subject Synopsis/ Indicative Syllabus	<p>Global Energy System and Economics Global energy dilemma; energy demand analysis; energy supply; energy forecasting</p> <p>Crude Oil Market Reserve estimation and reporting; history of the oil industry; oil benchmarks and price formation; peak oil hypothesis; oil trade</p>

	<p>Natural Gas Market Hub pricing and oil indexation; gas transport and storage economics; gas supply and consumption; gas trade and development of markets</p> <p>Coal Market Coal types and properties; historical development of the industry; global benchmark and trading; coal supply and demand analysis</p> <p>Electricity Market Economics of power generation and dispatch; cost of power generation; load division; power market regulation</p> <p>Renewable Energy Drivers for renewable energy; generation technologies; economics of renewable energy supply</p> <p>Energy Policy and Politics The focus of domestic energy policy priorities; geopolitics and international dimensions of energy supply; multi-criteria policy design and its consequences on optimal policy design</p> <p>Ethics and Energy Economics Ethical considerations in energy market design; Ethical topics surrounding energy infrastructure and resource extraction; Ethical limits of energy economics</p>																																																						
<p>Teaching/Learning Methodology</p>	<p>This subject is delivered primarily through lectures/seminars, supplemented by exercises, presentations and discussions. The focus of the readings, lectures, class conversations and assessment tasks will be both practical and technical in nature. Students are advised to go through the readings before class and be prepared to actively participate in class.</p>																																																						
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th></th> </tr> </thead> <tbody> <tr> <td>1. Group project and presentation</td> <td>25%</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>2. Mid-term test</td> <td>20%</td> <td>✓</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>3. Participation</td> <td>5%</td> <td>✓</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>4. Final Exam</td> <td>50%</td> <td>✓</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>Total</td> <td>100 %</td> <td colspan="6"></td> </tr> </tbody> </table>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c	d	e		1. Group project and presentation	25%		✓	✓	✓	✓		2. Mid-term test	20%	✓		✓	✓	✓		3. Participation	5%	✓		✓	✓	✓		4. Final Exam	50%	✓		✓	✓	✓		Total	100 %						
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	<i>To pass this subject, students are required to obtain Grade D or above in BOTH the Continuous Assessment and Examination component.</i>	
Student Study Effort Expected	Class contact:	
	▪ Lectures/Seminars	39 Hrs.
	Other student study effort:	
	▪ Reading materials/textbook	39 Hrs.
	▪ Group project and presentation	39 Hrs.
	Total student study effort	117 Hrs.
Reading List and References	<p>Textbook: Subhes C. Bhattacharyya, <i>Energy Economics: Concepts, Issues, Markets and Governance</i>, Springer-Verlag London, 2011</p> <p>References: Carol A. Dahl, <i>International Energy Markets: Understanding Pricing, Policies and Profits</i>, Pennwell, 2004 Andrew Inkpen and Michael H. Moffett, <i>The Global Oil and Gas Industry: Management, Strategy and Finance</i>, Pennwell, 2011 Pippo Ranci and Guido Cervigni, <i>The Economics of Electricity Markets: Theory and Policy</i>, Edward Elgar, 2013</p> <p>Indicative Journal Readings: Smith, James L. (2009). "World Oil: Market or Mayhem?", <i>Journal of Economic Perspectives</i>, 23(3), pp. 145-164 Smith, James L. (2012). "On the portents of peak oil (and other indicators of resource scarcity)", <i>Energy Policy</i>, 44, pp.68-78 Li, Raymond (2010). "The evolution of the international steam coal market", <i>International Journal of Energy Sector Management</i>, 4(4), pp.519-534</p>	