COURSE TITLE: Energy: Markets, Models & Strategies

Subject Area: MSO
Lecturer: Derek Bunn
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Course Administrator: Suzanne Shapiro
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  Extension: 8844
Course Code: E348
Term: Credit Value: 1

FACULTY BIO
Derek Bunn has been associated with the energy sector for many years, through research, teaching, publishing and consulting. He has been chief editor of Energy Economics and has founded the new Journal of Energy Markets. He has advised many international energy companies, including most of the main European power companies at various times, as well as official enquiries into energy markets by various government agencies worldwide.

COURSE SUMMARY
This course provides an introduction to an industrial sector of worldwide importance, and one in which there are now many business challenges through market restructuring and the development of low carbon technologies. Topics Covered:

- The energy commodities: oil, gas and electricity pricing processes
- Geopolitics and global markets for oil and gas
- Power system economics, regulation and market liberalisations
- Infrastructure investment in the energy sector
- Understanding value creation and the energy supply chains
- Carbon finance, renewable finance and low carbon technologies

This course is aimed at:

Students who would like a general introduction as well as participants from within the sector who would like to develop a broader understanding.

COURSE FORMAT
This course is offered as: Block week and weekly versions
LEARNING OUTCOMES

On successful completion of this course, you will be able to:

- Have an informed view of the global resources in oil, gas and renewables
- Understand the price formation processes for oil, gas, electricity and carbon
- Value old and new generation assets in the power sector
- Understand the regulated transmission and distribution network businesses
- Become more aware of the policies for creating a low carbon utility business
- Appreciate the costs and risks of new and old technologies for electricity.
- Have an awareness of the financing aspects of low carbon innovation.

ASSESSMENT

Assessment Table:

<table>
<thead>
<tr>
<th>Assessment type</th>
<th>Weighting</th>
<th>Group/ Individual</th>
<th>Formative/ Summative</th>
<th>Requirement to pass? Y/N</th>
<th>Timing in course schedule</th>
<th>Length (time/wordcount)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>25%</td>
<td>Group</td>
<td>Formative</td>
<td>N</td>
<td>Final Class</td>
<td>10 ppt slides</td>
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<tr>
<td>Market Analysis</td>
<td>75%</td>
<td>Individual</td>
<td>Summative</td>
<td>Y</td>
<td>Two weeks after final class for block week version; Friday of final week for weekly version</td>
<td>3000 words</td>
</tr>
</tbody>
</table>

Minimum requirements to pass this course:

1) minimum 50% in the weighted final numerical score AND ☒
2a) minimum 50% in the aggregate of the individual components OR ☒
2b) minimum 50% in the largest weighted individual component ☐

Assessment Overview

The group presentation will be a short analysis of a particular topic that will be assigned mid way through the course. It will be graded on the basis of the powerpoint slides only. The groups should be of size 3 or 4, and the presentations will provide a useful range of topics for discussion, mostly concerned with new technology assessments.

The individual project will be an analysis of a particular energy market in terms of its infrastructure, policies, pricing and challenges going forward.

Assessment and Learning Outcomes

The assessments for both the group presentations and individual market analysis will be based upon a compilation of the relevant facts, a sensible synthesis of the issues and a demonstration of a critical understanding of the topics covered in the course.

Plagiarism Declaration

All students completing this course should be aware that in submitting any assignment for this course, you agree to the following declaration:

“I certify that the coursework that I have submitted is entirely my own unaided work, and that I have read and complied with the School’s guidelines on plagiarism and referencing as set out in the School handbook.
I understand that the School may make use of plagiarism detection software and that my work may therefore be stored on a database which is accessible to other users of the same software."

Students should be aware that, where plagiarism is suspected, a formal investigation may be carried out under the School’s Student Disciplinary Procedure. This may result in penalties ranging from mark deduction to expulsion from the School.

PRE-REQUISITES & RELATED COURSE
None

COURSE PREPARATION & READING

Prework: Two articles distributed prior to the first class

Course work: Consolidation of the classwork but no required case preparations

Course materials will be distributed:
- Email class by class ☒
- Electronically on portal.london.edu ☒
- As a paper binder ☐

TEACHING METHODS

Teaching/contact hours: 27.5
Suggested independent study hours: 10

The following teaching methods will be used on this course:

- Lecture(s) ☒
- Guest Speaker(s) ☒
- Seminar(s) ☐
- External Visit(s) ☐
- Project(s) ☒
- Other (please specify below) ☐
- Computer workshop ☒

COURSE STRUCTURE

1. The Energy Commodities
2. Fundamentals of Global Oil Resources and Markets
3. Geopolitics of Gas
4. Modelling the global gas markets
5. Power market basics
6. The transmission and distribution businesses for power and gas
7. Renewable policies and carbon finance
8. Investment in low-carbon technologies