



# AFIN810

## Environmental Finance

S1 Day 2019

*Department of Applied Finance*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Lecturer and Convener

Terry Pan

[terry.pan@mq.edu.au](mailto:terry.pan@mq.edu.au)

Room 737, Building 4ER

Refer to iLearn

Credit points

4

Prerequisites

ACST603 or AFIN613 or ECON633

Corequisites

Co-badged status

Unit description

Environmental Finance is designed as an advanced unit to equip students with insights into the changing dynamics of the natural environment and the effects on finance and accounting decisions in the modern corporation. Students will learn about the international climate finance architecture as well as public and private investments into new projects associated with climate change adaptation and mitigation. The unit will introduce methods for evaluating the effects of environmental changes on business, introducing students to tools that will enable them to be intelligent users of risk assessment methodologies. It will also focus on exploring the implications of climate change for asset impairment, and introduces students to ideas around corporate social responsibility and the applicability to environmental finance. The unit concludes by introducing students to general ideas of how to evaluate adaptation and mitigation investment decisions under conditions of risk and uncertainty. Changing disclosure requirements from the changing environmental landscape are discussed.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

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

To gain an understanding of how energy and carbon markets function

To apply finance techniques and theory to make energy finance/investment decisions

To analyse how markets react to the new standards of sustainable finance and investment

To evaluate the state-of-art financing models for green assets

Work productively in a group to make recommendations regarding a business problem or opportunity

## General Assessment Information

### General Information

This course introduces you to the fundamentals of doing research. The course is designed to introduce you to an understanding of a variety of different methods, study designs and the fundamentals of qualitative and quantitative analysis. You will apply the skills by developing your own research questions, study design and project relevant to your studies or professional lives. The course will also provide a foundation to those of you who plan to conduct further research as part of your postgraduate studies. No prior knowledge or experience in research is required to take this course, apart from the prerequisites listed. The course is aimed at the postgraduate level.

### Marks

It is the responsibility of students to view their marks for each within session assessment on iLearn within 20 working days of posting. If there are any discrepancies, students must contact the unit convenor immediately. Failure to do so will mean that queries received after the release of final results regarding assessment marks (not including the final exam mark) will not be addressed.

### Feedback Prior to the Census Date

Self-assessment exercise question(s) will be released in Week 3 for feedback prior to the census date. The answers will be discussed before the census date in Week 4.

### Assessment Criteria

Assessment criteria for all assessment tasks will be provided on the unit iLearn site.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Assignment 1: Valuations</u></a>	20%	No	Week 7
<a href="#"><u>Case Study 1</u></a>	15%	No	Week 9
<a href="#"><u>Case Study 2</u></a>	15%	No	Week 12
<a href="#"><u>Final Exam</u></a>	50%	No	Examination Period

## Assignment 1: Valuations

Due: **Week 7**

Weighting: **20%**

**Task Description:** An individual assignment will be designed to cover contents of Topics 2-5. It will count for 20 marks. Students are required to upload solutions by Friday 5pm Week 7. More details will be announced in class. **Type of Collaboration:** Individual **Submission:** on-line **Format:** Refer to ilearn **Length:** Refer to ilearn **Inherent Task Requirements:** Refer to ilearn **Late Submission:**

No extensions will be granted. There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission – 20% penalty). This penalty does not apply for cases in which an application for special consideration is made and approved. No submission will be accepted after solutions have been posted

On successful completion you will be able to:

- To apply finance techniques and theory to make energy finance/investment decisions

## Case Study 1

Due: **Week 9**

Weighting: **15%**

**Task Description:**

A Group Presentation on one assigned Case Study on Risk Management will be presented by students during the class time of Week 9. More details will be announced in class.

**Type of Collaboration:** Group **Submission:** In-class **Format:** Refer to ilearn **Length:** 15 mins **Inherent Task Requirements:** Refer to ilearn **Late Submission:**

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for special consideration is made and approved

On successful completion you will be able to:

- Work productively in a group to make recommendations regarding a business problem or opportunity

## Case Study 2

Due: **Week 12**

Weighting: **15%**

**Task Description:**

A Group Presentation on one assigned Case Study on Financing Modes of Green Asset will be presented by students during the class time of Week 12. More details will be announced in

class.

**Type of Collaboration:** Group **Submission:** In-class **Format:** Refer to iLearn **Length:** 15 mins  
**Inherent Task Requirements:** Refer to iLearn **Late Submission:** No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for special consideration is made and approved

On successful completion you will be able to:

- To gain an understanding of how energy and carbon markets function
- To evaluate the state-of-art financing models for green assets
- Work productively in a group to make recommendations regarding a business problem or opportunity

## Final Exam

Due: **Examination Period**

Weighting: **50%**

### Task Description:

The final examination will be a 2.5-hour written paper with ten minutes reading time, held during the University Examination period. It will cover the topics studied throughout the semester.

A formula sheet will be provided for the exam.

**Type of Collaboration:** Individual **Submission:** In Class **Format:** Refer to iLearn **Length:** 2.5-hour written paper with ten minutes reading time **Inherent Task Requirements:** Refer to iLearn **Late Submission** No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for special consideration is made and approved.

On successful completion you will be able to:

- To gain an understanding of how energy and carbon markets function
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## Delivery and Resources

<b>Required Text:</b>	There is no prescribed textbook. Readings (where applicable) are taken from relevant academic books and journals. Refer to iLearn for further details.
<b>Unit Web Page:</b>	Access to iLearn

<b>Delivery Format and Other Details:</b>	<p><b>Classes</b></p> <p>The weekly three hour class time for this unit.</p> <p>Students must thoroughly read all assigned materials before coming to the class so that they are fully prepared to discuss the key issues.</p> <p><b>Timetables</b></p> <p>You are required to attend your timetabled classes. The timetable for classes can be found on the University web site <a href="http://www.timetables.mq.edu.au/">http://www.timetables.mq.edu.au/</a></p>
<b>Recommended Readings:</b>	
<b>Other Course Materials:</b>	

## Unit Schedule

Week	Contents
1	Introduction to Environmental Finance
2	Fundamental Analysis of O&G Companies (I)
3	Fundamental Analysis of O&G Companies (II)
4	Real Options and Its Applications in Environmental Finance (I)
5	Real Options and Its Applications in Environmental Finance (II)
6	Carbon Markets
7	Risk Management (I)
Recess	
8	Risk Management (II)
9	Green Bonds
10	Bundling and Securitization of Green Assets
11	Alternative Financing Models: Private Equity, Venture Capital, and Green FinTech
12	Stocks and Impact Funds: Social Responsible Investment
13	Revision

## Learning and Teaching Activities

### Module 1 Introduction to Environmental Finance

Energy Markets, Energy Transition, Project Finance, Climate & Carbon

## Module 2 Valuation of O&G Firms

Introduce standard valuation approaches for Oil and Gas (fossil fuel) companies; introduce the idea of stranded asset and its effect on valuations

## Module 3 Real Options and Its Applications in Environmental Finance

Introduce the basic ideas of real options and how it can be used to analyse cases in environment related issues

## Module 4 Carbon Markets

EU ETS, NZ ETS

## Module 5 Risk Management

Energy risk management and managing weather-related risk. Innovations in weather derivatives and hedging mechanisms.

## Module 6 Green bonds

In depth overview of green bonds, issuance, and rating.

## Module 7 Bundling and Securitization of Green Assets

Introduce the basics of securitization and its applications in green assets.

## Module 8 Alternative Financing Models: Private Equity, Venture Capital, and Green FinTech

Overview of how green projects can be financed by private equity, venture capital, and green FinTechs (P2P, Crowd lending, Crowd equity)

## Module 9 Stocks and Impact Funds: Social Responsible Investment

Integrating ESG factors into fundamental investment analysis; Social Responsible funds

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)

- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Supplementary exams

Information regarding supplementary exams, including dates, is available at:

[http://www.businessandconomics.mq.edu.au/current\\_students/undergraduate/how\\_do\\_i/disruption\\_to\\_studies](http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/disruption_to_studies)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)



## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

#### Learning outcomes

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#### Assessment tasks

- Assignment 1: Valuations
- Case Study 1
- Case Study 2
- Final Exam

### PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience,

of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

## **Learning outcomes**

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## **Assessment tasks**

- Assignment 1: Valuations
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## **PG - Research and Problem Solving Capability**

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

## **Learning outcomes**

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