



2017-2018

Nom du cours / Name of the course:

The Economics of Energy and the Environment

Enseignant / Professor:

Jan Horst Keppler

Contact de l'enseignant / Contact Information (Optional)

Email : jan-horst.keppler@dauphine.fr

Langue d'enseignement / Language:

French or English, depending on composition of class

Overview:

The class will provide students with an overview of key concepts in both environmental economics and energy economics with a special focus on the performance of European electricity markets. The class will develop those notions in a framework alternating between private and social utility maximisation.

Prérequis / Prerequisites (optional)

Admission to the master 2 « Energie, finance, carbone »

Objectifs du cours / Course Objectives:

The class should enable students to apply the most important notions of environmental and energy economics to basic policy analysis.

Mode d'évaluation / Mode of Assessment

Written exam

Planning / Course Schedule

1	Externalities, Fixed Costs and Information <ul style="list-style-type: none">a. Private and public goodsb. Externalitiesc. Informational complexity and transaction costsd. The role of governments
2	The Static Model of Optimal Internalisation of Externalities I <ul style="list-style-type: none">a. The Pigouvian approachb. Instruments for Internalisationc. The Working of Emissions Markets
3	The Static Model of Optimal Internalisation of Externalities III <ul style="list-style-type: none">a. The distributional implications of the static modelb. Grandfathering versus auctioningc. Risk, uncertainty and option value
4	The Measurement of Externalities I <ul style="list-style-type: none">a. Measuring Abatement Costb. Measuring Social Costs (including loss of option value)
5	The Measurement of Externalities II <ul style="list-style-type: none">a. Distributional implications of environmental policiesb. The Coasean critique (Coase against Coase)c. The Rebound Effect
6	Energy and Sustainable Development <ul style="list-style-type: none">a. Sustainable development in the energy sectorb. Energy efficiency and the rebound effectc. World energy perspectives
7	Electricity Markets <ul style="list-style-type: none">a. The functioning of electricity markets and price formationb. The investment challenge and the capacity issue
8	Topics in electricity markets <ul style="list-style-type: none">a. Projected costs of generating electricityb. Carbon pricingc. System effects
9	The Interaction of Carbon and Electricity Markets <ul style="list-style-type: none">a. Theories of price formation in the carbon marketb. Causality between CO2 prices and energy variablesc. Rents of electricity producers due to carbon pricing

Bibliographie / Bibliography:

Arrow, Kenneth J. (1970). "The Organization of Economic Activity: Issues Pertinent to the Choice of Market versus Non-Market Allocation", in Robert H. Haveman and J. Margolis (eds.), *Public Expenditure and Policy Analysis*. Chicago.

Coase, Ronald H. (1960). "The Problem of Social Cost", *Journal of Law and Economics* 1(1): 1-21.

http://www.ecosystemvaluation.org/dollar_based.htm

Freeman, Myrick (1979). *The Benefits of Environmental Improvements: Theory and Practice*. Baltimore: Johns Hopkins University Press.

Joskow, Paul L. (2007), "Competitive Electricity Markets and Investment in New Generating Capacity", in Dieter Helm (ed.), *The New Energy Paradigm*, Oxford University Press, pp. 76-121 also at <http://economics.mit.edu/files/1190>.

Kepler, Jan Horst (2010). « Causalities between CO₂, Electricity, and other Energy Variables during Phase I and Phase II of the EU ETS » avec M. Mansanet-Batailler, *Energy Policy* 38(7): 3329-41.

Kepler, Jan Horst (2010). « The Impact of the EU ETS on Prices and Profits in the Electricity Sector » avec M. Cruciani, *Energy Policy* 38(8): 3280-90.

Kepler, Jan Horst (2010). « The Interaction Between the EU ETS Carbon Market and European Electricity Markets » in Ellerman D., Convery F. and de Perthuis C., *Pricing Carbon : The European Union Emissions Trading Scheme*, Cambridge University Press, Cambridge (UK), 2010, p. 293-328.

Kepler, Jan Horst (2010). « Going with Coase against Coase: The Dynamic Approach to the Internalization of External Effects », in *The Economics and Finance of Sustainable Development*, Economica, Paris, p. 118-139.

Kepler, Jan Horst (2000). « Prices, Technology Policy and the Rebound Effect » with F. Birol, *Energy Policy* 28 (6-7), p. 457-469.

Kepler, Jan Horst (1998). « Externalities, Fixed Costs and Information », *Kyklos* 52 (4), p. 547-563.

Pigou, Arthur Cecil (1932). *The Economics of Welfare*. London: Macmillan.

Stoft, Steven (2002), *Power System Economics*, Piscataway (NJ), IEEE Press.

MyCourse

This course is on MyCourse: **Yes**

Grading

The grade will be determined by a final written examination at the end of the semester.

Class participation: Regular attendance is obligatory. Justified absence must be indicated to the instructor *in advance*. Repeated failure to show up in class on time can lead to deductions from the final grade.

Exam policy: Unexcused absences from exams will result in a zero grade.

Academic integrity

Be aware of the strict rules at Université Paris-Dauphine about plagiarism and cheating during exams.