Energy and environmental economics

ECTS : 6

Description du contenu de l'enseignement :

- Economie de l'énergie et de l'environnement - Transmission de connaissances fondamentales en économie de l'énergie et de l'environnement The class will provide students with an overview of key concepts in both environmental economics and energy economics. It should enable students to apply these concepts to basic policy analysis. 1. Externalities, Fixed Costs and Information (Private, public goods, club goods and externalities, informational complexity, transaction costs and the Coase theorem) 2. The Optimal Internalisation of Externalities (The Pigouvian approach, instruments for internalisation (taxes, standards, emission trading etc.), efficiency considerations of different internalisation measures, the distributional impacts of different measures) 3. Dimensions of Social Cost (Categories of social costs, risk, uncertainty and real option value) 4. The Measurement of Externalities (Measuring abatement cost, methods to measure social costs I + II) 5. Special Topics: Distribution and Energy Efficiency (Compensating vs. equivalent variation: the impact of distribution on social costs; Energy efficiency and the rebound effect) 6. Electricity Markets I + II (Sustainable development in the energy sector, the functioning of electricity markets and price formation, working with screening curves, the investment challenge according to Joskow, capacity remuneration mechanisms (CRMs), storage and demand response) 7. The Full Costs of Low Carbon Electricity Systems (Projected costs of generating low carbon electricity, full costs and system costs of different generation technologies 8. The Interaction of Carbon and Electricity Markets (Carbon prices and electricity prices: theories of price formation in the carbon market, causality between CO2 prices and different energy variables, rents of electricity producers due to carbon pricing: grandfathering vs. auctioning)

Compétence à acquérir :

Compétencess en économie de l'énergie et de l'environnement

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.

Mode de contrôle des connaissances :

Mémoire sur un de dix sujets proposés en intégrant les acquis du cours

Bibliographie, lectures recommandées :

Bibliographie

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.

Barde, Jean-Philippe (1991), Économie de l’environnement, Presses universitaires de France, Paris.

Baumol William and W. Oates (1988). The Theory of Environmental Policy. New York: Cambridge University Press.

Coase, Ronald (1997), The Firm, the Market and the Law, Chicago: University of Chicago Press.

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

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Hicks, John R. (1932, 1963, The Theory of Wages, London: Macmillan.

Joskow, Paul L. (2006), “Capacity payments in imperfect electricity markets: Need and design”, Utilities Policy (16)3: 159-170.

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.

Keppler, Jan Horst (2019), The Costs of Decarbonisation: System Costs with High Shares of Nuclear and Renewables, with Marco Cometto, OECD, Paris.

Keppler, Jan Horst (2018), The Full Costs of Electricity Provision, OECD, Paris.

Keppler, Jan Horst (2017), « Rationales for Capacity Remuneration Mechanisms: Security of Supply Externalities and Asymmetric Investment Incentives », Energy Policy 105, 2017, p. 562-570.

Keppler, Jan Horst (2011), Carbon Pricing, Power Markets and the Competitiveness of Nuclear Power, with Claudio Marcantonini, OCDE, Paris.

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

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

Keppler, 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.

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

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

Keppler, Jan Horst (1992), « Abgabentariffierung vor dem Hintergrund konkreter Gesetzesvorhaben » with A. Eberhardt, Zeitschrift für Angewandte Umweltforschung 5(3), 1992, p. 360-373.

Léautier, Thomas-Olivier (2013), “The Visible Hand: Ensuring Optimal Investment in Electric Power Generation”, IDEI Working Paper 605, http://idei.fr/display.php?a=22628.

Lind, R. C., Ed. (1982), Discounting for Time and Risk in Energy Policy, Washington, DC: Resources for the Future.

Pearce, D. W. and R. K. Turner (1990), Economics of Natural Resources and the Environment, Baltimore, The Johns Hopkins University Press.

Pigou, Arthur Cecil. 1920. The Economics of Welfare. 2nd Edition. London: Macmillan.

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

Viscusi, Kip (2005), “The Value of Life”, Harvard Law School, Discussion Paper No. 517, 06/2005, available at http://law.harvard.edu/programs/olin_center/.

Weitzman, Martin (1974), “Prices vs. Quantities”, Review of Economi

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