Workshop

Developments in Energy Economics

Madrid, 28 January 2016

Program

Thursday, 28 January

10.00	**Welcome and introduction** *Gonzalo Sáenz de Miera, AEEE*
10.05 – 10.50	**New methods to evaluate key variables in energy markets** *José M. Labeaga, UNED*
10.50 – 11.35	**Output-based allocations in pollution markets under uncertainty and self-selection** *Juan-Pablo Montero, PUC Chile*
11.35 – 12.00	Coffee
12.00 – 12.45	**Strategic Green Industrial Policy** *Carolyn Fischer, RFF and FEEM*
12.45 – 13.00	**Presentation of the Supplemental Issue of Energy Economics (2015): 6th Atlantic Workshop on Energy and Environmental Economics** *Xavier Labandeira, Economics for Energy*

New methods to evaluate key variables in energy markets | *José M. Labeaga, UNED*

This talk has two main aims: first, we describe some publicly available data with information about the evolution of energy markets; second we present some methods to deal with these kind of data (big data) in order to evaluate several key market variables. Our first exercise takes data from Global Database of Events, Language, and Tone (GDELT) to built sentiment indicators. The GDELT Project consists of over a quarter-billion event records in over 300 categories covering the entire world from 1979 to present, along with a massive network diagram connecting every person, organization, location, and issue to this event database. Nowadays, social networks are gaining in strength and are even influencing key variables in financial markets or markets of goods and services. Energy markets are not an exception. In Spain, the growing demand for affordable, reliable, domestically sourced, and low-carbon electricity is a matter of concern and it is driven by several causes including public policy priorities. Policy objectives and new technologies are changing wholesale market design. The analysis of different aspects of energy markets is increasingly on the agendas of academics, firms' managers or policy makers. Some concerns are global and are related to the evolution of climate change phenomena. Others are regional or national and they strongly appear in countries like Spain with a high dependence on foreign energy sources and high potential of domestic renewable energy sources. We can find a relevant case in Spanish solar energy policy. A series of regulatory reforms since 2010 reduce revenues to existing renewable power generators and they end up the previous system of support to new renewable generation. This policy change has altered the composition of the energy market affecting investment decisions. We feel necessary to evaluate this policy measure since the public opinion about the national energy policy may be a useful component for investment decisions. This is the first purpose of building indexes of sentiment, while the final aim is to analyze if they have any incidence on the evolution of prices or demand in energy markets. Our second exercise uses data from the Iberian Electricity Market (MIBEL), which began in 2007. We have hourly energy prices from all sources for Spain and Portugal and we are interested both in the evolution of congestion (measured through residual demand) and how this evolution has been driven by market power of the agents. We evaluate both congestion and market power using econometric methods and agent-based simulation models and we compare the performance of both methodologies.

Output-based allocations in pollution markets under uncertainty and self-selection | *Juan-Pablo Montero, PUC-Chile*

We study the design of pollution permit markets in which a fraction of permits are allocated to firms based on their output. Output-based allocations are not only receiving increasing attention ---as in the carbon markets in California and the EU--- but they can also be optimal under demand/supply uncertainty despite the output distortions they may create. The optimal design combines auctioned permits with output-based allocations increasing in uncertainty. When firms are better informed about the latter or must self select, the regulator resort to some free (i.e., lump-sum) allocations to sort firms out. Numerical exercises illustrate that the gains from considering output-based allocations can be substantial, but only if properly designed.

Strategic Green Industrial Policy | *Carolyn Fischer, RFF and FEEM*

Industrial policy—in the form of financial support or preferential trade measures for domestic industry—has long been a focus of criticism in the trade literature and is subject to various disciplines under the WTO agreements. Green industrial policy, however, is gaining popularity, as governments search for low-carbon solutions that may also provide jobs at home. Globally, subsidies for technologies like renewable energy are far more prevalent than carbon pricing. These support policies may encourage downstream deployment or upstream development and manufacturing of those technologies. Unlike tariff rules, the Subsidies Code lacks exceptions for transboundary externalities like human health or resource conservation, including those related to combatting global climate change. The strategic trade literature has also largely ignored the issue of market failures related to green goods. This paper considers the market for a new environmental good (e.g., an alternative renewable energy technology)

that when consumed downstream may provide external benefits (like reduced emissions). Government may also overweight the role of producer surplus in the domestic welfare function, such as due to lobbying by interest groups, introducing a political distortion. We examine the national incentives and global rationales for offering production and consumption subsidies in producer countries, allowing that some of the downstream market may lie in non-regulating third-party countries. Restraints on upstream subsidies may improve global welfare when political distortions are large enough, and environmental externalities small enough. However, numerical simulations of the case of renewable energy indicate that a modest social cost of carbon can imply benefits from allowing upstream subsidies.

José M. Labeaga

José M. Labeaga is PhD in Economics from the Autonomous University of Barcelona and professor of economic theory at the Spanish Open University, UNED. He has been general director of the Spanish Institute for Fiscal Studies and director of the FEDEA-BBVA research chair on new consumers. His main research interests lay in the analysis of individual behavior in consumption and labour decisions, and on the simulation and assessment of the effects of different public policies. He has served in the board of different organizations and journals, and has published the results of his research in the main academic journals of his field. José M. intensely collaborates in the research of Economics for Energy in the area of energy demand.

Juan-Pablo Montero

Juan-Pablo Montero is Professor of Economics at the Pontificia Universidad Católica de Chile (PUC Chile) and has held visiting positions at several universities including MIT (Sloan School), Harvard (Kennedy School of Government), Stanford (CLAS and Economics) and UC Santa Barbara (Bren School of Environmental Science and Management). He received a Civil Engineering degree from PUC Chile and M.Sc. and Ph.D. degrees in Economics from MIT. His research work concentrates on industrial organization, environmental and resource economics and has been published in the leading academic journals (AER and JPE). In 2007 he was named "Chilean Economist of the Year" by El Mercurio, the main Chilean newspaper.

Carolyn Fischer

Carolyn Fischer is a Senior Fellow at Resources for the Future and currently a Marie Sklodowska–Curie Fellow of the European Commission, visiting at the Fondazione Eni Enrico Mattei (FEEM) in Venice, Italy. She is also a fellow of the CESifo Research Network and a member of Environment Canada's Environmental Economics and Policy Research Network. Previously, she has been a Visiting Professor at Gothenburg University; a Dahrendorf Visiting Fellow at the London School of Economics; a UCE3 Senior Fellow at the University of California at Santa Barbara; a Fellow at the Center for Advanced Study of the Norwegian Academy of Science and Letters; and a staff economist for the Council of Economic Advisers to President Clinton. She has served on the Board of Directors of the Association of Environmental and Resource Economists, and currently serves on the scientific board of Economics for Energy and the economics advisory board of Environmental Defense Fund. She is on the editorial board of the Review of Environmental Economics and Policy and the International Review of Environmental and Resource Economics and has been Associate Editor of Resource and Energy Economics. Fischer earned her Ph.D. in Economics from the University of Michigan at Ann Arbor in 1997 and her B.A. in International Relations from the University of Pennsylvania in 1990.

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