



## Editorial

## New developments in energy economics and policy

This special issue gathers a selection of the papers presented in the Fifth Edition of the Atlantic Workshop in Environmental and Energy Economics, held in A Toxa (Spain) in June of 2012. The headline of the meeting was the proper design of public policies in the domain of energy and environmental economics. The papers that we next present took on this challenge around three main subjects: Energy policy, Energy access and Environmental-Fiscal policy. Before describing the contents of the issue, however, we would like to thank the organizations that made the celebration of this workshop possible: *Fundación Barrié*, *Rede Research Group* and *Economics for Energy*. The discussions held in A Toxa were very relevant both for the selection of the papers as well as for their improvement. Finally, we are especially grateful to the external reviewers, who assisted us in evaluating the papers, and to Richard S.J. Tol, co-editor of *Energy Economics*.

It is clear that energy policies are now heading the agendas of policymakers across the world. Yet, a proper analysis of the impact as well as the optimal design of energy policies demands the prior consideration of several important issues. **Loureiro, Labandeira and Hanemann** therefore explore public preferences towards climate change policies in the Spanish transport sector and provide useful information for policy design in this area. A further important input for a suitable policy analysis is the estimation of energy demand. To this end, **Blázquez, Heimsch and Filippini** perform an empirical analysis of the Spanish residential electricity demand in which they estimate price and income elasticities under the presence of spatial effects. **Linares and Conchado** enter into the nuclear debate by assessing the break-even investment cost required to make nuclear generation of electricity competitive with other generation technologies in a liberalized market. Following a different topic, **De Castro and Dutra** provide a theoretical analysis of the main challenges regarding smart grids: reliability, demand response and cost recovery of investments and the effect on deployment. Finally, **Würzburg, Labandeira and Linares** revise the literature on how renewable production affects the prices of electricity and, in so doing, they provide estimations for the German-Austrian market.

With this information, governments may be able to focus on the optimal design and impact of policies. For example, **Edenhofer, Hirth, Knopf, Pahle, Schlomer, Schmid and Ueckerdt** address the design of an optimal renewable energy policy by providing an analytical framework to apprehend the economics of renewable energy. Indeed, the paper discusses the various market failures and barriers relevant to the market penetration of renewable energy. Decision makers also require feedback on the potential effects of policies that have to be implemented. Therefore, this special issue also looks at a few specific policies and the type of impact they have produced. In this line, **Galarraga, Abadie and Ansuategui** use demand and supply elasticities to evaluate an existing scheme of subsidies (the “Renove” plan in Spain) to purchase

energy-efficient appliances. The main result shows that a combination of a tax and a subsidy can be designed to facilitate the implementation of market-based instruments while improving the efficiency of energy policies. **Gallego, Montero and Salas** assess the economic effects of two different transportation policies on car use in Latin America that are designed to persuade drivers to give up their cars in favor of public transport, and hence, to reduce congestion and pollution. For this purpose, the authors develop a model that characterizes the short and long-run impacts of several transportation policies, showing that impacts can vary widely among different income groups.

The availability of sufficient and reliable energy is other important matter related to energy policy, particularly in the developing world. Access to energy is crucial for the development of economic activities. Yet energy is also the source of important external (negative) environmental effects, particularly those related to the emission of greenhouse gases that are the cause of climate change phenomena. **Chakravarty and Tavoni** address a very relevant issue: energy poverty and how it relates to climate change. Using a simple but illustrative model, the authors analyze whether ensuring access to modern energy sources in developing countries may have a negative impact on CO<sub>2</sub> emissions. Their results show that the additional energy demand that would be required to eradicate energy poverty would lead to a relatively minor contribution to global warming. Thus, the analysis supports the thesis that energy poverty and climate change policies can be set independently from each other.

The growing importance of public policies in the energy domain is evident within this setting of scarcity of energy resources and dependence relationships among countries. Notwithstanding, an optimal design of environmental-fiscal policy is complex due to several of the aforementioned objectives and trade-offs associated to energy production and consumption. However, the impact of the economic recession is increasingly becoming more relevant in many countries: in the midst of budget restrictions, the incidence and interactions of instruments and the implications and good progress of energy policies should be assessed.

Several articles deal with the interaction between tax and energy policies and economic growth. Energy-Environmental Taxation has a high revenue capacity and, as part of a Green Tax Reform (GTR) scheme, plays a crucial role in changing the fiscal mix and moving the tax burden from labor, income or saving to pollution and energy intensity, from direct to indirect taxation, from *good things* to *bad things*. This is how the so-called double dividend, which is the basic idea that inspires such reforms, may be obtained. In this setting, **Goulder** identifies the circumstances that make a double dividend possible and the conditions required to reduce the costs of the tax system as well as provide environmental benefits. The relevance of each institutional setting is stressed in the article by **Markandya, González-Eguino and**

**Escapa**, which analyzes the application of GTR under the influence of the historically high unemployment rate and large informal economy.

Therefore, the likelihood of GTR achieving environmental and economic improvements becomes an important empirical challenge. Plenty of studies and ambitious empirical research programs have studied the impacts of Energy-Environmental Taxation insolated and as part of GTR models. In this issue, **Bartocci and Pisani** use a two-country dynamic general equilibrium model. They calibrate a GTR with a carbon tax for Italy and the rest of the European Union and obtain small and positive effects on economic activity in certain institutional conditions. **Rausch** takes a similar approach by applying a dynamic general equilibrium model with overlapping generations and a carbon tax in the U.S. economy. The author examines the distribution and efficiency impacts of a package where public debt consolidation is taken as an option for revenue recycling and marginal taxes on capital or labor are simultaneously reduced. Under certain conditions of social discount rates and social preferences, Rausch indicates that combining fiscal consolidation and climate policy would be welfare-enhancing.

This issue also covers other courses of action to connect tax and energy policies. For example, the article of Weigt, Ellerman and Delarue

analyzes the overlapping impact of Emission Trading System and renewable energy for the German electricity system and suggests that the interaction effect is consistently positive. Finally, the increasing involvement of subnational administration points to the complex relationship of the jurisdictional structure of countries with tax and energy policies. The interest of the paper by **Burtraw and Woerman** lies in identifying the optimal territorial setting to anticipate the implementation of policies. Among other things, the authors suggest that the lack of efficiency gains of multi-level instruments and the collision between devices in different geographical areas should be avoided.

Carlos de Miguel\*

Alberto Gago

Baltasar Manzano

*Rede, Universidade de Vigo, Facultade de CC.EE., Campus As Lagoas s/n,  
36310 Vigo, Spain*

\*Corresponding author.

*E-mail address: [cmiguel@uvigo.es](mailto:cmiguel@uvigo.es) (C. de Miguel)*