Science advancements, policy immobility: the two faces of climate (in)action, by C. Carraro, M. Davide, V. Barbi, G. Marangoni

The first IPCC Assessment Report was released in 1990 and served as the scientific basis of the decisions taken within the United Nations Framework Convention on Climate Change (UNFCCC), signed in 1992. In 1997, the Convention adopted the Kyoto Protocol, which entered into force on 16 February 2005 as the first international agreement to reduce greenhouse gas from the atmosphere. The Kyoto Protocol assigned specific targets to industrialized nations, considered as the main responsible for the increase of carbon emissions, with the objective to reduce overall emissions by 5.2% compared to 1990 levels in the period 2008-2012. In the meanwhile, three other IPCC Assessment Reports were published in 1996, 2001 and 2007 and the next one, the fifth, is due by the end of 2014. In more than twenty years, the scientific community definitely made consistent progress in the understanding of climate change drivers and dynamics. On the contrary, the future of international climate policy still need to be defined. At the end of 2012, the first commitment period under the Kyoto Protocol just came to an end, leaving the world to cope with questions and uncertainties about the future of climate policy. Indeed, the second round of commitments under the Kyoto Protocol just started with few adhering countries, while the new international agreement including all Parties is expected to be adopted by 2015 and to come into force not before 2020. Ahead of the upcoming Warsaw UNFCCC Conference, it would be definitively worthwhile to take stock from the 2008 – 2012 Kyoto experience, also in the light of the efforts the international community is called to accomplish in the coming years. After a quick look at the key findings of the recently released Working Group I volume of the new IPCC Assessment Report, this paper analyses both the international and national dimensions of climate action, in order to understand how far countries are from reaching the emission reduction objectives that science believes to be necessary to avoid disruptive and irreversible climate change impacts. Through the WITCH model, the paper also provides some quantitative insights on the economic and energy implications of policies designed to limit temperature increase to no more than 2°C above pre-industrial levels.

Keywords: Climate Change Science, Greenhouse gas emission reduction, Kyoto Protocol, International Climate Policy

JEL classification: F5, Q54, Q58

EU-Russia cooperation in a rapidly changing interregional gas market, by M. Skalamera

In the past few years the gas sector has experienced a wave of unprecedented changes. The increasing globalization of gas markets and the technological breakthrough of shale gas production in the United States have triggered deep changes in Eurasian gas market governance. The long-established oil indexation in gas contracts is now challenged not only by the European Commission's efforts at liberalization but also by the private sector. The industrial sector's support for change has provoked a robust redefinition of gas governance structures between Russia and the EU, amidst Russian calls for the support of long-term gas contracts. The latter, from its perspective as a rising power in its own right, has no intention of importing EU's regulatory structures on its territory and is resisting them while operating in the EU. Against this background, this paper seeks to investigate the issues that are arising with respect to the EU's desire to change the institutional arrangements in gas trade with Russia. If the EU seizes the paradigm change as a moment to take Russia's proposals and ideas into consideration, the energy partnership could become more solid and symmetrical. In contrast, should the downward spiral of mutual disappointment continue, Russia will increasingly turn eastwards. In that context, if the US decides to withhold its shale gas bonanza for domestic use during a complicated shale revolution in the Old continent, the unreliability of Russian gas could force Europe to rethink its strategies.

Keywords: EU-Russia, energy cooperation, paradigm change, industrial sector's interests

JEL classification: Q48

Influence of new factors on global energy prospects in the medium term: comparison among the 2010, 2011 and 2012 editions of the IEA's World Energy Outlook reports, by G. Moncada Lo Giudice, F. Asdrubali, A. Rotili

Several economic, geopolitical, demographic and environmental factors drive world's energy scenario; among them, the reduction of greenhouse gases emissions and the consequent development of renewable energy sources, the global financial crisis, the increase in global population and urbanization, the increase of fossil fuels prices have had a particularly strong impact in recent years. Furthermore, exceptional events, such as the accident at the Fukushima nuclear power plant in Japan, may occur to complicate World energy scenarios.

The most recent reports on world energy markets, especially the WEO - World

Energy Outlook, are characterized by the introduction of new prospects and scenarios, as a result of unpredictable events such as Fukushima accident or of emerging factors, such as the increasing share of unconventional resources in the future energy mix (shale gas and shale oil) and the importance of energy efficiency, proposing an "Efficient World Scenario". Disappointing signals about the development of renewables are also recorded.

The paper focuses on the comparison among the major reports and statistical energy data, especially the 2010, 2011 and 2012 editions of the World Energy Outlook issued by IEA. Mid-term energy scenarios are presented and discussed, with particular emphasis on the increasing importance of energy efficiency, on the new prospects concerning nuclear power and on the role of unconventional fossil fuels.

Keywords: Energy scenarios, WEO, nuclear power, energy efficiency, non-conventional fossil fuels

JEL classification: Q4, Q41, Q47

The impact of carbon prices on CCS investment in South East Europe, by A. Višković, V. Valentić, V. Franki

The aim of this paper is to analyze the feasibility of a new entrant power plant based on coal with an installed Carbon Capture and Storage (CCS) system. The plant will be analysed as an Independent Power Producer (IPP) based in Croatia and therefore a part of the South East European Regional Electricity Market (SEE REM) and a member of EU Emission Trading Scheme (EU ETS) obligated to pay for its emissions through Emission Unit Allowances (EUA). Long Run Marginal Cost (LRMC) of the plant will be calculated and certain sensitivities included. By using a market simulator of the region and implementing the model of the plant in question, the performance of the power plant on the electricity market is evaluated and the influences of different emission prices are analyzed. The research results in a prediction of the price of EUA at which a CCS coal-fired power plant becomes economically justified.

Keywords: Carbon Capture and Storage, Independent Power Producer, Emission Trading Scheme, Emission Unit Allowances, Coal Power Plant, South East European Regional Electricity Market

JEL classification: D24

Quality of life in major italian cities: do local governments cost efficiency contribute to improve urban life style? An introductory analysis, by S. Bigerna, P. Polinori

In this paper we set forth a novel analysis of urban quality of life (QoL) using Data Envelopment Analysis (DEA) approach. We use a newly constructed municipality database, which includes all 103 provincial capitals. In our approach we follow a

two-stage method. In the first stage, we estimate efficiency scores through a non-parametric DEA with desirable and undesirable outputs. Estimated rankings are compared to Legambiente index. In the second stage, we regress efficiency scores on economic, social and political variables. Our main objective is to estimate non discretionary variables effects on efficiency. According to Simar and Wilson (2007) results show that local government efficiency is highly heterogeneous and that there exists high correlation among our rankings and Legambiente index. Considering exogenous effects, geographical conditions and political aspects constitute the main determinants of municipalities' efficiency.

Keywords: Data Envelopment Analysis; Two-stage; Quality of Life; Undesirable output; Local Government Efficiency

JEL classification: C24, C61, R38

Nautical tourism, carrying capacity and environmental externality in a protected lagoon of Northern Adriatic Sea, by F. Silvestri, S. Ghinoi, V. Barone

Tourism and environmental preservation are often conflicting activities, mainly in coastal lagoons, where seaside mass-tourism comes into contact with a very sensitive ecological system. In this paper we deal with a classical problem of both environmental and tourism economics, the internalization of environmental costs of tourism, focusing on the nautical fruition of the Lagoon of Marano and Grado (North-Eastern Italy, Friuli Venezia Giulia Region).

Using different instruments, both theoretical (Carrying Capacity framework, Polluter-Payer principle, Coase compensation) and empirical (Log-log regression, Forecasting model, CBA with defensive expenditures and actual market values), we ascertained the result that – given the current nautical berths endowment - a standard Coase equilibrium (unit external cost equal to unit private benefit) does not hold, and a higher number of vessels transiting in the Lagoon is more effective than a tempered fruition for nature conservation. Another interesting result is that the best available solution to internalize environmental externality is a mixed one, combining a command and control rule (a speed-limit prescription) with a Coasian compensation scheme.

All the technical theoretical and empirical derivations are reported in Appendix A (Pressure Parameter Calculation), Appendix B (Benefit and Cost Calculation), and Appendix C (Data set and Econometric Tests).

Keywords: Tourism Carrying Capacity, Nature conservation, Externalities, Empirical studies

JEL classification: Q01, Q26, Q57