

Bocconi



Università Commerciale
Luigi Bocconi

IEFE Annual Report 2010



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Preface

Dear Reader,

2010 was a busy year at IEFE. During the first year of implementation of the new 2010-2012 Research Plan, various research projects were completed and new ones were initiated. Some of these projects were included in the Research Plan, others were not.

Research on global energy markets looked at nuclear energy – a hot topic during the year – but also at renewable sources, both from the point of view of the European targets and from a foreign investment perspective. Climate and Energy Policies were analyzed both at the national and supranational level as well as from the point of view of local administrations. Modeling efforts able to simulate the sectoral as well as regional effects of climate change impacts and climate policies continued with an additional, fresh perspective: what are the implications of carbon pricing and support to renewables for the public accounts of European Member States? The Macro-subject on Regulation of Liberalized Markets hosted the highest number of research projects, with studies ranging from electricity to gas and water.

IEFE activity in 2010 also consisted of organizing meetings of its three Observatories, which provide an opportunity for policy-makers, researchers and industry operators to discuss issues that are relevant in the current debate surrounding energy markets and environmental policies. In addition to that, IEFE continued its collaboration with EnergyLab, a research foundation founded in Milan in September 2007 with the goal of creating a network between universities, the business world and regional and local government to support research, development and innovation and to promote awareness of energy-related matters among the public, government institutions, private bodies and the media. Moreover, IEFE began collaborating with the Brussels-based CERRE, the Centre on Regulation in Europe, set up in 2010 to promote robust and consistent regulation in Europe's network industries.

The output of IEFE research activity, as in the past, found its way to several outlets, from numerous seminars and meetings to working papers and the recently added research reports line, and eventually to publications in books and scholarly journals.

The Director



1. Introduction

The Center for Research on Energy and Environmental Economics and Policy (Istituto di Economia e Politica dell'Energia e dell'Ambiente - IEFE) is the Università Bocconi research center which co-ordinates and conducts applied research in the following fields:

- a) Energy economics, focusing on energy markets as well as on natural resources
- b) Environmental economics, focusing both on environmental policy and environmental management and sustainability concerning private companies and public agencies
- c) Economics of public utilities focusing on energy, water and waste

This report summarizes the research activity carried out by IEFE in 2010 in sections 2, 3 and 4 and describes its main publications and conferences in sections 5, 6, 7 and 8. IEFE structure and organization are set out in sections 9, 10, 11, 12 and 13.

2. IEFE Research Activity

The description of IEFE research activity in 2010 for both completed and ongoing projects is organized according to macro-subjects. These were presented in the IEFE Three-Year Research Plan (RP3) 2010-2012, which identified the guidelines as well as the resources required to implement them. The RP3 for the period 2010-2012 was approved by the Steering Committee on 18 November 2010 and is available on the IEFE website at www.iefc.unibocconi.it.

The three macro-subjects of the RP3 2010-2012 are:

- RP3/1 Towards global energy markets
- RP3/2 Integrated climate and energy policies
- RP3/3 The role played by regulation in liberalized sectors

The table below presents the research projects that were planned at the beginning of the three-year period, together with the relevance for the three macro-subjects. The one below is not an exclusive list of IEFE research activity in the planning period.

Research Projects	Macro-subjects		
	RP3/1	RP3/2	RP3/3
	Towards Global Energy Markets	Climate and Energy Policies	Regulation of Liberalized Markets
ECCELSA - Environmental Compliance based on Cluster Experiences and Local SME-oriented Approaches			
ENCLIMOD – Computable General equilibrium Modeling of the Effects of Climate and Energy Policies			
RE-SHAPING			
A National Strategy for Energy and Climate			
Determinants of Innovation in Energy Technologies			
Growth, Population, and the Environment			
Oil Price Shocks, Stabilization Policies and Economic Growth in Oil-Exporting Countries			

Please note: the boxes shown in orange indicate the importance of each research project for each RP3 macro-subject. The shade of orange indicates the level of relevance from the least relevant (white) to the most relevant (dark orange).

Research Projects	Macro-subjects		
	RP3/1	RP3/2	RP3/3
	Towards Global Energy Markets	Climate and Energy Policies	Regulation of Liberalized Markets
Sustainable Mobility			
The Contribution of Domestic Measures for Achieving GHG Reduction Objectives in the EU Context and the Role of Local Authorities			
The Quest for Gas: Future Scenarios			
Vertical Integration and Retail Competition under Environmental Regulation			

Please note: the boxes shown in orange indicate the importance of each research project for each RP3 macro-subject. The shade of orange indicates the level of relevance from the least relevant (white) to the most relevant (dark orange).

Below we provide a short description of the research projects that were completed or were ongoing in 2010. Some of these projects were included in the Research Plan 2010-2012, others were new and additional.

RP3/1 – Towards Global Energy Markets

Nuclear Energy

Research Directors: Emanuele Borgonovo (ELEUSI) and Clara Poletti
Timing: 2009-2010

Within the EnergyLab Research Project on Nuclear Energy, IEFE conducted an analysis of investment and generation costs of electricity based on nuclear technologies. The focus of the research project is on the impact of different financing structures on production costs. We compare two settings. In the first, investment is financed “on budget” by a big energy company, such as Enel or Edf and the electricity produced by the nuclear power plant is directly sold in the wholesale market. In the alternative setting, investment is realized by a consortium. The electricity produced by the consortium belongs to the members, who can either sell it to the market or consume it. We show that, given the different price-risk allocation, the Levelized Unit Energy Cost (LUEC) of nuclear production is expected to be higher under the “on budget” solution.

Foreign Investments in Renewable Energy and the Role of Public Policies

Research Director: Annalisa D’Orazio
Research team: Federico Pontoni
Timing: 2009–2010

This study was conducted within the framework agreement between Università Bocconi and Ernst & Young. The project analyzes the internationalization of Italian

firms in the renewable energy sector. The aim of the research project is twofold. On one hand, it studies the main characteristics of the internationalization in this fast growing sector by analyzing the global market and discussing some case studies. On the other hand, it focuses on Italian firms to grasp a better understanding of their position within this industry, in order to highlight both strengths and weaknesses. In recent years renewable energies are attracting more and more investments worldwide. Promotion policies and other grants are the real stimulus for investments, also resulting in good opportunities for the future. Industrial players as well as financial operators are actively investing in a market that has become global. Within this framework, Italian companies continue to focus more on the domestic market also given the high level of domestic incentives; however, some of them are beginning to develop a global strategy for renewable energy. In any case, positive experiences in the domestic market and a greater ability to export new solutions in the near future can help strengthen the vision and the desirability of FDI's.

RE-SHAPING - Shaping an Effective and Efficient European Renewable Energy Market

Research Director: Arturo Lorenzoni

Research team: Niccolò Cusumano, Giacomo Selmi

Timing: 2009–2011

The overall aim of the RE-SHAPING project is to develop sound policy recommendations and policy implementation strategies for RES market penetration in all 27 EU member states after the 2020 target of 20% of the final energy consumption from RES stated by Directive 2009/28/EC.

The study monitors the policies of the Member States in light of their target and identifies successful actions. IEF's research in 2011 is focused on flexibility mechanisms, to investigate the role of foreign investments in RES target achievement. The research team is coordinated by the Fraunhofer Institute – ISI and includes some of the major European research groups in renewable energy economics and regulation.

Analysis of the Environmental and Energetic Chains in the Province of Milan

Research Director: Marco Frey

Research team: Andrea Fontanella

Timing: 2010

The project aimed at supporting *Assolombarda* – the largest territorial association of the entire entrepreneurial system in the country – in analyzing sustainability chains within the Province of Milan. Starting from data collected from Assolombarda-associated firms, the project led to a detailed analysis of enterprises working in environmental and energetic sectors within the Province of Milan, with a focus on distribution of competences, roles, experiences and research and innovation activities.

The survey brought to light a reality rich in enterprises and competences in sustainable sectors, with great opportunities for network creation, but currently very fragmented due to the small dimension of firms. During the project, enterprises operating in the same sector had the opportunity to meet themselves and to start working with Assolombarda to receive the necessary support to create networks and be competitive at the Italian, European and International levels.

Nuclear Energy and the Italy of Tomorrow – Benefits for Industry and Research and the Alternatives to Nuclear Energy

Research Director: Arturo Lorenzoni

Research team: Fabio Disconzi

Timing: 2010

Enel and EDF asked The European House – Ambrosetti, a consultancy, to set up a comprehensive study on the feasibility of nuclear energy in Italy, with the contribution of major experts in different areas of knowledge. IEFE was involved with the definition of the reference scenarios for the electricity sector at 2030, taking into account the expected trend in electricity demand and its coverage by different energy sources, with or without nuclear power.

Energy Markets

Research Director: Anna Creti

Research team: Paolo Bertoletti, Monica Bonacina, Alberto Cavaliere, Clara Poletti

Foreign Partner: Université de Montpellier-LAMETA (France)

Timing: 2010–2011

How is the impact of liberalization on energy security and environmental protection affected by the actual working of energy and complementary (i.e. storage and emission) markets? Are current policy frameworks suitable to correct inefficiencies? IEFE leads and coordinates an international team investigating (1) the consequences – as for productive, allocative and dynamic efficiency - of alternative rationing rules to allot scarce storage capacity; (2) the effectiveness of auction mechanisms for the provision of universal service obligations in liberalized markets; (3) the impact of alternative policy mixes, spillover effects and market power on emission abatement paths; and (4) the effects of liberalization on international gas markets' bargaining powers. Concerning the allocation of scarce storage capacity, major rationing rules in force move away from efficiency criteria and lead to discrimination among gas suppliers. Due to asymmetric information, auctions may outperform centralized rationing rules, especially when liberalization is early on, but unbundling is essential to preventing strategic behaviors. An upstream leadership in the access to storage facilities leads a dominant firm to stockpile more than supplied in the downstream market to raise rivals' costs.

Ten Years Since the Liberalization of the Italian Electricity Generation: Lessons to Be Learned

Research Directors: Guido Cervigni, Clara Poletti

Research team: Federco Boffa, Annalisa D'Orazio, Massimo Piacentino, Simone Spalletta

Timing: 2010

In 2000 electricity generation in Italy was opened up to competition. Ten years later many things have changed and many more are under scrutiny. The research project describes the evolution of the Italian wholesale electricity market over the past ten years and identifies four main issues that the liberalization process has left unaddressed. "Energy-only" markets have proved inefficient in driving investments and a lack of coordination between generation and transport capacity has led to an inefficient infrastructural development. Moreover, the planned deployment of a significant amount of renewables in electricity production raises questions on the role of the policy maker in driving investments: from the market back to centralized

planning? Finally, various distortions in the functioning of the natural gas market have had a key impact on the functioning of the electricity market. All these issues need to be urgently addressed within a unified framework.

RP3/2 – Climate and Energy Policies

The Contribution of Domestic Measures for Achieving GHG Reduction Objectives in the EU Context and the Role of Local Authorities: The CARTESIO Guidelines

Research Director: Fabio Iraldo

Research team: Andrea Fontanella, Sabrina Melandri, Tania Molteni

Timing: 2009–2010

The research project, promoted by the network of Italian Regions “Rete CARTESIO” which includes the Region of Lombardy, aimed to develop credible and practicable scenarios with high participation on the economic valorization of GHG emission reduction effectively obtained by local authorities. On the basis of guidelines for public local entities for implementing GreenHouse Gas mitigation initiatives, the study simulated strategy planning by local authorities with the support of the CARTESIO Regions. The research activity developed a proposal to obtain economic benefits from GHG reduction plans and projects, in order to support economically interested local authorities in meeting Kyoto objectives and EU 20-20-20 objectives. Several options were considered at this purpose: the use of existing mechanisms of credits valorization (Gold Standard, VCS 2007, VER+, etc.); as well as the introduction of new mechanisms that could be adopted at the local, regional or national levels (i.e. issuance of specific credits from GHG reduction projects; credits exchange between Regions and public operators; hypothetical integration and mutual recognition of the new credit system with ETS; elaboration of assignment criteria for Regional Funds based on reductions achieved from the projects).

As a follow up of the study, CARTESIO guidelines have been included as a methodological reference in the Region of Emilia Romagna’s “Call for the Realization of Local Climate Plans” and in similar “calls for proposals” published by private actors (such as Cariplo Foundation). More importantly, the CARTESIO guidelines are currently being adopted as the key-methodological reference in a newly funded LIFE+ project (LAIKA – Local Authorities Improving their Kyoto Actions), aimed at creating a platform for the exchange of voluntary credits among Italian regional and local authorities. The LAIKA project is applying the guidelines elaborated by IEFÉ in four primary Municipalities: Milan, Turin, Bologna and Lucca.

ENCLIMOD

Research Director: Roberto Roson

Research team: Marzio Galeotti, Martina Sartori

Foreign Partner: The World Bank (Washington DC, USA)

Timing: 2009–2012

ENCLIMOD purports to develop a computational modeling platform to analyze various issues in the area of energy and climate policy at the Italian, European, as well as world levels. The project benefits from a partnership with the World Bank where IEFÉ contributed to the development of ENVISAGE (Environmental Impact and Sustainability Applied General Equilibrium Model), a dynamic computable

general equilibrium model of the world economy, which is paired with a numerical climate model aimed at carrying out Integrated Assessment Modeling exercises. More generally, the project aims at developing models and modeling capabilities in the field of Computable General Equilibrium models at IEFEE. Models developed this way are all based on the GTAP (Global Trade Analysis Project) database and structure. In 2010, IEFEE worked on incorporating sector-specific climate damage functions in the ENVISAGE model, in part by estimating new parameters and by introducing new equations. Two papers, looking specifically at the issue of water scarcity and virtual water trade, have been prepared and presented at international conferences.

ECCELSA – Environmental Compliance based on Cluster Experiences and Local SME-Oriented Approaches

Research Director: Michela Melis

Research team: Michele Barberio, Andrea Fontanella

Timing: 2009–2011

ECCELSA is a project funded within the European Commission *Life+ Programme* aimed at supporting an effective application of the EC “ECAP – Environmental Compliance Action Plan”. It is especially focused on SMEs, as they represent 99% of all EU enterprises and, despite their small size, their contribution to environmental pollution is large. SMEs limits, in terms of human, technical and financial resources, often make it difficult to implement environmental compliance and environmental performance improvement related actions.

In such a context, the project aims at testing the “cluster approach” – based on the creation of SME networks, resource sharing, innovation development and knowledge exchange – as a means to increase local environmental skills and to improve environmental performances, both in companies and at an industrial area level.

Following a methodological finalization of the “cluster-based” strategic approach to ECAP carried out in 2009, in 2010 the activities of the project focused on the identification of the main priorities for action in each territorial clusters involved. By means of an *Orientation Map*, the environmental policy priorities, the critical issues to guaranteeing compliance for SMEs and the key actors to be involved for the development of the project activities were specified. Furthermore, drawing from the *Orientation Map*, the critical environmental aspects were identified in each cluster by means of a *Hot Spots Analysis* and an appropriate *Action Plan* to promote and pursue compliance of SMEs was designed. To complement the Action Plan, a Communication Process was also launched.

ECCELSA Deliverables and Reports may be downloaded from the official website of the EU project: www.eccelsalife.it.

Determinants of GHG Emissions and Comparative Analysis of Mitigation Policies for Global Cities

Research Director: Edoardo Croci

Research team: Sabrina Melandri, Tania Molteni

Timing: 2009–2011

According to IEA's estimates, cities are responsible for two-thirds of the world's energy use and for more than 70% of CO₂ emissions. The contribution of individual cities to global emissions can be very different: values published in literature are in the range 2 - 30 tCO₂e per capita. What are the main determinants of

these differences in emissions? This issue was investigated through a qualitative data analysis, which put in relationship emissions values with a set of urban indicators (related to climate conditions, urban form, economic activities, state of technology, mobility and housing infrastructures, income). The analysis focused on the housing sector and transport, the two most relevant contributors to urban emissions.

Looking at emissions from energy use in residential buildings, climate stands out as a primary determinant, in particular for cities having high heating or cooling needs. Cities in similar climate conditions show different levels of direct fuel consumption according to the features of the residential stock (size, age). The study confirms that electricity consumption is related to the level of economic welfare. This result could be linked to a larger diffusion of electric appliances in high-income than lower-income cities.

Considering ground transport, the form of cities and the features of the vehicle stock appear as determinant in shaping emissions: high density enables cities to satisfy a relevant quota of passenger demand through non-motorized transport and, thanks to a diffused network, through public transit. On the other hand, the efficiency of the vehicle stock can balance the role of transportation modes.

Several city governments have recognized a potential to reduce GHG emissions within their urban areas and have committed voluntarily to emissions reduction targets. All the five global cities analyzed (London, New York City, Milan, Mexico City and Bangkok) have defined a coherent strategy with their local emission contexts, as they focus mitigation measures on the most relevant sectors for their urban emissions (the building sector for cities from industrialized countries, transportation for cities from developing countries).

Life Cycle Assessment (LCA) of the Products “Tuborg Beer” and “Carlsberg Beer” Produced by Carlsberg Italia

Research Director: Fabio Iraldo

Research team: Andrea Fontanella

Timing: 2010-2011

Carlsberg and Tuborg beers are distributed in three different ways: steel kegs, non-returnable glass bottles and D Master kegs. This is a new technology of PET kegs developed by Carlsberg Italia. The project carried out a *Life Cycle Assessment* (LCA) of the three distribution systems with a special focus on the real environmental benefits of the new technology compared to traditional technology. On the basis of the project's LCA analysis, together with Carlsberg's aim of communicating the environmental properties of its products, in December 2010 Carlsberg Italia became the first beer producer in the world to obtain an *Environmental Product Declaration* (EPD®) for the “beer product”, a certified environmental declaration developed in accordance with the standard ISO 14025.

THINK - A Think Tank Hosting an Interdisciplinary Network to Provide Knowledge Support to EU Energy Policy Making - The Impact of the Green Package on Member States' Public Accounts

Research Director: Pippo Ranci

Foreign Partner: Florence School of Regulation, European University Institute, Florence

Research team: Marzio Galeotti, Maria Grazia Pazienza, Clara Poletti, Martina Sartori

Timing: 2010–2013

What will be the impact of the implementation of the EU climate and energy

package on Member States' (MS) public budgets? IEFE is part of a team of researchers who have been asked to analyze the consequences of carbon taxation, ETS, and subsidies for the introduction and diffusion of low-carbon energy technologies, including renewables, for MSs' public revenues and expenditures and their balance. Very preliminary results seem to suggest that changes to the Net Budget Impact (NBI) are mainly driven by changes in revenues from carbon pricing. The European countries most significantly affected, both positively and negatively, are small countries with a low GDP per capita. The impact on large economies is much smaller and generally positive except for very low carbon abatement costs and fuel prices. The largest positive impacts within big economies are expected in France, while the lowest are expected in Germany.

RP3/3 – Regulation of Liberalized Markets

Zero REGIO

Research Director: Susanna Dorigoni

Research team: Liliya Chernyavs'ka, Cristian Lanfranconi, Pietro Lanzini, Antonio Sileo

Foreign Partners: Infracore GmbH & Co. Höchst KG (D) (coordinator), Linde Gas & Engineering AG (D), DaimlerChrysler AG (D), Fraport AG (D), TÜV Hessen (D), Agip Deutschland GmbH (D), Lund University (S), Roskilde University (DK), Saviko Consultants Ltd. (DK), European Commission-JRC Ispra (I), Eni Tecnologie S.p.A. (I), Regione Lombardia (I), SAPIO Group S.r.l. (I), Comune di Mantova (I), Centro Ricerche Fiat S.C.p.A. (I)

Timing: 2004–2010

Zero REGIO is an integrated project co-financed by the European Commission in the 6th Framework Program, consisting of construction and demonstration of hydrogen infrastructure in two European regions for supplying fuel cell passenger cars. The project aims at developing and demonstrating zero emission road transport systems in normal daily use for European cities.

Under the coordination of Infracore Höchst GmbH & Co KG altogether 16 partners from 4 European Member States form the project consortium. After the construction of hydrogen infrastructure, fuel cells are driven in normal daily use in different applications. The demonstration phase is accompanied by an evaluation of the data acquired during the fleet tests with respect to energy efficiency, environmental impact and socio-economic aspects. IEFE is responsible for the analysis of the economic viability of the project, and to this respect, the study assessed that high fuel taxes and oil prices, paired with efficient hydrogen production, are required for FC vehicles to become competitive, while fiscal incentives for hydrogen cars would not be necessary. At a €15/GJ fuel tax there is a tipping point at crude oil price of around 90/100\$ per barrel (which appears to be realistic). Alternatively, adding a €44/tCO₂ taxrate to the €10/GJ would provide equal competitiveness to hydrogen as the €15/GJ fuel tax. As far as trajectories for cost reduction are concerned, the analysis evidenced that FCs are now very expensive, but have a strong potential for cost reduction through learning and for other key hydrogen vehicle components a relatively fast decrease in costs is also expected. While hydrogen vehicles have a large potential for cost reduction through learning, this is not the case for large-scale hydrogen production, which is already a mature technology. As far as hydrogen production is concerned, natural gas (steam reforming) is the least-cost alternative at present, but the learning potential is not encouraging. Coal is another low-cost source of hydrogen, but it also has low potential for learning, while on the other hand production based on

renewables and nuclear technology has important environmental benefits and learning potential, but to date remains costly.

The Normative Evolution of the Gas Distribution Service in Lombardy

Research Director: Susanna Dorigoni

Research team: Antonio Sileo

Partner: Università degli Studi di Milano, Università degli Studi di Milano-Bicocca

Timing: 2009–2010

For each geographical area of Italy, the distribution service is managed by a system operator that has been granted a concession from the competent local authority. The concession lasts 12 years, after which the local authority auctions the service again. As for network ownership, there are a variety of cases, which can be divided into two main categories: public ownership and private ownership. Consequently, ownership and management can be separated in principle. It is clear that, within this framework, the main concern comes from the possibility to efficiently design a mechanism for the correct evaluation and remuneration of all investments performed by system operators in the network, since, at least in principle, it may be owned by someone else.

The research project – realized for EnergyLab - sets a proper methodology to address the abovementioned trade off. In particular, it proposes a tariff structure that permits to solve the trade-off, by allowing the System Operator to efficiently manage the network and carry out all necessary investment.

2009: Year of Local Technological Networks

Research Director: Antonio Massarutto

Timing: 2009-2010

The EnergyLab Foundation asked IEFE to study local technology networks giving special consideration to the issue of private sector participation in the infrastructural business. The emphasis was on long-run sustainability when universal service and/or other general interest dimensions must be guaranteed. The role of public policies aimed at ensuring sustainability in support of, rather than as an alternative to, private financing was analyzed. The main implications of the research project were then applied to the water industry taken as a case study. The main conclusions of the analysis concern the need to develop risk-sharing mechanisms aimed at achieving a more effective allocation of economic risk, and especially of regulatory risk. Alternative ways to obtain these goals were discussed with special reference to the water sector.

Effective Market Monitoring of Electricity and Gas Retail Markets

Research Director: Clara Poletti

Research team: Guido Cervigni, Ruggero Civitarese, Alberto Minarelli, Simone Spalletta

Timing: 2010

IEFE has supported the national regulatory authority, *Autorità per l'energia elettrica e il gas*, in defining framework guidelines for an effective market monitoring process of the electricity and gas retail markets. Though much attention in the past has been given to the monitoring of wholesale markets, retail markets should not be

overlooked. The opening of the mass market to competition has in fact raised a number of issues concerning the way competition actually works on those markets, as well as customer satisfaction and quality of the service. The research report sets out three main proposals and analyzes their practical implementation. First, the monitoring of retail markets should be organized in line with the standard methodological tools adopted in anti-trust investigations. Product and geographic relevant markets analyses should therefore drive the computation of monitoring indicators, such as market shares. This would help the coordination between regulation and competition policy. Second, market monitoring should be designed in a flexible manner, in order to adapt the set of indicators to the problem at stake. The collection of raw data is therefore recommended, when reasonable. The deployment of an Integrated Information System to manage the switching process would help implement an efficient, flexible and transparent monitoring process. Third, the monitoring of retail markets should be integrated as much as possible with the other data gathering processes already in place.

How to Improve Competition in Electricity and Gas Retail Markets

Research Director: Guido Cervigni

Research team: Ruggero Civitarese, Clara Poletti, Simone Spalletta

Timing: 2010

Since July 2007 both electricity and gas retail markets in Italy are fully open to competition. All consumers, including households, can choose their supplier. The liberalization of mass markets has proved to be cumbersome, not least because it required a new set of processes and mechanisms to coordinate a large number of subjects: consumers, retailers, distributors, metering service providers. In this framework the research project focused on the design of an efficient and reliable information system to support the switching process. Efficient and reliable information exchange mechanisms are in fact a necessary condition for a viable competitive process. After analyzing the actual switching process, the study put forward a proposal for an Integrated Information System (SIC). In the proposed Integrated Information System an agency is in charge of a centralized database storing all the information necessary to associate each withdrawal point (final customer) with its supplier, balance responsible and distribution service provider. This centralized solution is now being implemented. The Single Buyer (Acquirente Unico Spa) will be the manager of the centralized database.

Economic Regulation of Water Services in Italy

Research Director: Antonio Massarutto

Research team: Monica Bonacina

Timing: 2010-2011

The study aims at supporting the ongoing reform of economic regulation of water services in Italy, based on the results of a previous study already published in the IEFE Research Reports. More in detail, the study starts from a comparative analysis of micro-institutional aspects of economic regulation of water services in selected countries, focusing on ex-post negotiation between operators and regulators/responsible entities which are recognized as the key element affecting the performance of regulated water and sanitation utilities. A further objective of the study is to offer an evaluation of the outcomes of the Italian water sector reform so

far (from the mid-'90s to now) with a social welfare approach, in order to appreciate the creation of value that has been generated by the transformations undergone by the water industry in this period; this should also take into consideration while designing innovative regulatory mechanisms.

The research project has been financed by a pool of public (in-house) and partially privatized utilities, in collaboration with the national utility association (Federutility) and also with the support of the national regulatory authority for water services (CONVIRI). The drafting of the final report is in progress; from the study we expect to obtain papers and articles to be submitted to international journals.

Smart Grids: The Regulatory Framework

Research Director: Clara Poletti

Research team: Giuseppe Buglione, Antonio Sileo

Timing: 2010-2011

Within the EnergyLab Research Project on Smart Grids IEFÉ's role is to analyze the economic and regulatory aspects related both to the deployment of smart distribution grids and the use of these new technologies. To achieve the main benefits, it is necessary to adapt the market design and regulation to the requirements of new networks and operators. This calls for interventions such as a change in the rules for dispatching and accessing the network or reform of the price-cap mechanism. As an application of these concepts two Italian pilot projects are considered: the experimentation in the Southern regions and the use of electric vehicles in the cities of Rome and Milan.

Investments on Transport Infrastructure of Natural Gas and Electricity

Research Director: Clara Poletti

Research team: Guido Cervigni, Anna Creti, Federico Pontoni, OlhaZadorozhna

Partner:CSIL, Milan

Timing: 2010-2011

The project proposes a comprehensive methodological framework to assess the economic impact of transmission upgrades in a liberalized framework. Moreover, it addresses the issue of how the investment costs could be shared among different countries.

The methodology allows the assessment of the impact on social welfare of any transmission upgrades, by simulating the market outcome with or without the new infrastructure. Moreover, environmental externalities and security of supply concerns are taken into account in the simulation and assessment process. Within a unifying methodological framework, we have considered two different approaches to take into account the distinguishing features of each sector. For the electricity sector, the assessment is mainly based on a Security Constrained Optimal Dispatch Model, which simulates a cost-effective equilibrium between supply and demand. For the gas sector, the assessment is also based on a cost effective simulation of the market equilibrium, but with a different approach, which takes into account the high degree of uncertainty related to the model inputs.

The outcome of the proposed models allows not only for the assessment of any increase in welfare, but also possible surplus redistribution amongst geographic areas and, within an area, between generators and consumers. That is the starting point for a cost sharing rule, which should be based on a "beneficiary pays" principle.

3. Thematic Observatories

In addition to conducting research projects, the Center also manages thematic Observatories, open both to members and non-members, which focus on topics and issues of particular policy interest. These Observatories are high-level working platforms, where researchers, firms and institutions meet to discuss and compare different views and methods of analysis.

Observatory on Energy and Environmental Policy (OPEA)

This Observatory was established in 1995 with the goal of monitoring the development in European and Italian energy and environmental policies, in order to assess their implications for the Italian industrial and economic system and promote dialogue between actors in the political, institutional and industrial environments. Companies operating in the electricity and gas industries typically participate in this Observatory.

Observatory on Integrated Environmental Management Systems (OSIGA)

This Observatory, established in 1997, is a qualified venue for discussing and analyzing emerging environmental management issues at the Italian and international levels. It monitors ISO and EMAS environmental registrations and certifications and provides constantly updated information on the development of new environmental policy tools at the Italian and EU levels. Central and local institutions, accreditation and certification bodies, trade and industrial associations, environmentalist and consumer associations, trade unions and industrial and service companies specialized in environmental management participate in the Observatory.

In 2010, the OSIGA meetings addressed the following issues:

- The new Emas III Regulation (Reg. 1221/2009/CE) (19 January);
- The Emas Regulation: state of the art of European registrations and recent evidence on organizations' costs, benefits and implications on environmental performances (1 March);
- The UNI EN 16001 "Energy Management Systems - Requirements with guidance for use" (14 April);
- The "Guidelines for the definition and implementation of local authorities' GHG emission reduction strategies" of the CARTESIO Network (8 June);
- The new EU Ecolabel Regulation (Reg. 66/2010/CE) (25 October);
- The new EU Life+ PROMISE Project ("PROduct Main Impacts Sustainability through Eco-communication") (25 October);
- The outcomes of the Study on Environmental Advertising on Italian Print Media of the Scuola Superiore S. Anna (25 October);
- The European MED-IPPC-NET Project "Network for strengthening and improving the implementation of the IPPC European Directives regarding the

Integrated Pollution Prevention and Control in the Mediterranean” (16 December);

- The effects of the application of the IPPC Directive on companies’ management and competitiveness (16 December).

Observatory on Communication and Environmental Information (CIA)

This Observatory was established in 2006 as an observatory on environmental information and participation. In its first two biennia (2006-2008, 2008-2010) it monitored Italian and international legislation governing information, participation and access to environmental law and justice. Its main purposes have been to promote a uniform implementation of the law and define policy guidelines for administrative transparency in the environmental sector.

The Observatory has subsequently widened its scope to environmental communication and information strategies of companies, public administrations and non-profit entities.

Public institutions, such as the Italian Ministry of the Environment, regions, municipalities, regional environmental protection agencies, the European Commission consortia, professional associations and consortia of waste recovery and recycling participate in this Observatory.

During 2010 the following seminars were held:

- The Implementation of European PRTR (Pollutant Release and Transfer Register) (17 March 2010);
- Survey on Access and Diffusion of Environmental Information in Consortia of Waste Recovery and Recycling (29 June 2010);
- Environmental Communication: Public policies and corporate strategies in the Green Economy Era (conference) (27 October 2010).

4. Other Activities

CERRE

Providing top quality studies, training and dissemination activities, the **Centre on Regulation in Europe (CERRE)** (www.cerre.eu) was set up in 2010 to promote robust and consistent regulation in Europe's network industries. CERRE's members are regulatory authorities and operators in those industries as well as universities.

The possibility for all consumers and users to have access to quality services at reasonable prices is not yet today the general rule for Europe's network industries. Good regulation is thus necessary to improve both the EU process of liberalization of those industries and, more widely, public governance.

CERRE's threefold objective is: 1) promoting robustness and consistency in regulation processes and systems in Europe; 2) clarifying the respective roles of market operators, governments and regulatory authorities; 3) recommending and disseminating top quality regulation practices. CERRE studies are geared towards the concrete strategic and operational needs of its members.

CERRE's Director General is Bruno Liebhaberg, Professor at the Solvay Brussels School of Economics and Management, Université Libre de Bruxelles. Joint Academic Directors are Martin Cave, Professor at the London School of Economics and Political Science; Jean-Claude Maun, Professor and Dean of the Engineering School (Ecole Polytechnique), Université Libre de Bruxelles; Pierre Larouche, Professor and Co-Director of the Tilburg Law and Economics Centre (TILEC), Tilburg University; **Clara Poletti**, IEFE Director, Università Bocconi.

EnergyLab

EnergyLab Foundation (www.energyfoundation.org) was founded in Milan in September 2007 with the goal of creating a network between universities, the business world and regional and local government. The foundation aims to support research, development and innovation and to promote awareness of energy-related matters among the public, government institutions, private bodies and the media. The founding members are the Lombardy Regional Government, the Milan City Council, Università Bocconi, Università degli Studi di Milano-Bicocca, Università Cattolica del Sacro Cuore, Politecnico di Milano, Università degli Studi di Milano, the AEM Foundation and the Edison Foundation. RSE – Ricerca sul Sistema energetico S.p.A. is a participant institution in the foundation. IEFE Director **Clara Poletti** was named a member of the Executive Committee of the EnergyLab Foundation, while IEFE Research Fellow **Marzio Galeotti** is a member of EnergyLab Scientific Committee.

Among other activities, EnergyLab's research is organized around laboratories aimed at facilitating and promoting interaction between experts in universities, industry and government with respect to energy-related issues that are held to be of significant current interest and/or involve a high degree of innovation. In the three-year period period 2009-2011 the foundation launched five Research Laboratories

on: 1) Renewable Energy Sources 2) Nuclear Energy 3) Smart Grids 4) Sustainable Mobility 5) Access to Energy. IEFE research projects play an active role in these labs, either as members of each lab's scientific committee or by directly carrying parts of the lab research project.

In 2009-2010 IEFE was active in the lab on the production of nuclear energy for civil needs and on smart grids: the evolution in infrastructures and the provision of electricity. In addition, EnergyLab asked IEFE to analyze the normative evolution of the gas distribution service in Lombardy. We reported on these activities in the previous section. In 2010 two new labs – on renewables in the Region of Lombardy and on energy poverty and access to energy in the developing world – began work.

GME Newsletter

In 2008 IEFE began cooperating with the Italian power exchange company, GME SpA, aiming at analyzing the electricity and CO₂ markets.

In 2010 – the last year of the collaboration – IEFE contributed to the monthly GME newsletter on the following topics:

- n. 23 (Jan.): *Il lungo transitorio della distribuzione gas* (by Clara Poletti and Antonio Sileo);
- n. 24 (Feb.): *Quale futuro per le Iniziative Regionali dopo il Terzo Pacchetto* (by Guido Cervigni and Clara Poletti).

The newsletter can be downloaded from the GME website (www.mercatoelettrico.org). IEFE articles are also available on our website (www.iefc.unibocconi.it) in the “Policy Notes” section.

Policy Notes

Since 2008 IEFE researchers have been contributing to the Italian debate on relevant issues surrounding energy and environmental policy. These policy notes are often published also in specialized forums, typically web sites, magazines or newspapers. Here is the list for 2010.

- 23 November 2010
Se finisce tutto a tarallucci e acqua, by Antonio Massarutto (Lavoce.info)
- 5 November 2010
Fino alla prossima Terzigno, by Antonio Massarutto (Lavoce.info)
- 7 October 2010
Rifiuti: meglio l'inceneritore o la discarica? Analizziamo i sistemi di gestione, by Alessandro de Carli (Greenews.info)
- 24 September 2010
Ritorno al nucleare e Corte costituzionale. Atto primo, by Antonio Di Martino and Antonio Sileo (nelMerito.com)
- 21 September 2010
Sfogliando la margherita dell'ecopass, by Marzio Galeotti (Lavoce.info)
- 17 September 2010
Il gas non convenzionale cambia lo scacchiere energetico mondiale. E l'Italia?, by Antonio Sileo and Gionata Picchio (nelMerito.com)
- 3 September 2010
Disincentivi alle discariche per prevenire le crisi, by Alessandro de Carli (viasarfatti25.it)

- 31 August 2010
Il fotovoltaico, un investimento per il futuro, by Arturo Lorenzoni (Lavoce.info)
- 24 August 2010
Carburanti: ma è tutto risolto?, by Antonio Sileo (AGI Energia)
- 23 August 2010
Più efficiente e meglio raggiungibile, ma la città di domani rimarrà anche bella?, Interview with Edoardo Croci (viasarfatti25.it)
- 23 August 2010
Auto elettrica: sarà la volta buona?, by Arturo Lorenzoni and Antonio Sileo (Lavoce.info)
- 9 August 2010
Pozzi di petrolio a rischio dal Messico al Mediterraneo, by Marzio Galeotti (Lavoce.info)
- 20 July 2010
Un altro anno a mezzo gas, by Antonio Sileo and Pierpaolo Signorelli (AGI Energia)
- 14 July 2010
Genitori e padrini della rinascita nucleare italiana, by Marzio Galeotti (Lavoce.info)
- 2 July 2010
Rinnovabili e non: l'energia dopo la crisi, Interview with Clara Poletti (laRepubblica.it-TV)
- 30 June 2010
L'auto elettrica e l'impatto per il sistema elettrico, by Arturo Lorenzoni and Antonio Sileo (AGI Energia)
- 22 June 2010
Shale gas: un rivolgimento epocale nella geografia energetica mondiale, by Antonio Sileo and Gionata Picchio (AGI Energia)
- 15 June 2010
Fonti di energia rinnovabile, by Clara Poletti (Lavoce.info)
- 7 June 2010
Ma quanto è verde la città!, by Edoardo Croci (viasarfatti25.it)
- 28 May 2010
Virtuale non sempre significa virtuoso, by Clara Poletti (Quotidiano Energia)
- 25 May 2010
Centrali nucleari italiane? Usiamo quelle degli altri, by Marzio Galeotti (Il Riformista)
- 24 May 2010
In Europa viene sprecato un quinto dell'energia, by Annalisa D'Orazio (viasarfatti25.it)
- 17 May 2010
Senza consenso niente nucleare, by Antonio Sileo (la Repubblica -Milano)
- 27 April 2010
Acqua: morte di una gara annunciata e non capita, by Antonio Sileo (AGI Energia)
- 23 April 2010
Politica energetica e politica ambientale in Italia: tanti interventi ma poca strategia, by Annalisa D'Orazio and Clara Poletti (nelMerito.com)
- 20 April 2010
Le due facce del caro-carburante, by Marzio Galeotti (Lavoce.info)
- 19 April 2010
Italian plan to guarantee industrial storage capacity under fire, comment by Antonio Sileo (ICIS Heren)

- 6 April 2010
Rinnovabili, occasione d'oro, by Arturo Lorenzoni and Clara Poletti
(viasarfatti25.it)
- 26 March 2010
La rigida primavera del clima, by Marzio Galeotti (Lavoce.info)
- 8 March 2010
Ricerca IEFE sulle rinnovabili: luci e ombre dello sviluppo industriale in Italia,
Article about Annalisa D'Orazio's research report by Caterina Tripepi
(Greenews.info)
- 19 February 2010
Dalle persone alle cose (che inquinano), by Antonio Massarutto (Lavoce.info)
- 9 February 2010
Quale futuro per le Iniziative Regionali dopo il Terzo Pacchetto, by Guido
Cervigni and Clara Poletti (GME Newsletter)
- 26 January 2010
Italia a corto di strategie sul clima, by Annalisa D'Orazio (Lavoce.info)
- 15 January 2010
Mercato elettrico Italia secondo Poletti, Interview with Clara Poletti
(Quotidiano Energia)
- 14 January 2010
Il lungo transitorio della distribuzione gas, by Clara Poletti and Antonio Sileo
(GME Newsletter)
- 12 January 2010
L'intrico della distribuzione gas, by Antonio Sileo and Gionata Picchio
(nelMerito.com)

5. Working Paper Series

In April 2007 IEFE started a series of working papers in English addressing research topics in the fields of energy and environmental economics. The papers can be downloaded from the IEFE website (www.iefef.unibocconi.it).

2010

“Input Choice under Carbon Constraint”

IEFE Working Paper n. 40 – November
by Alain Bousquet and Anna Creti

“The Political Economy of (De)Regulation: Theory and Evidence from the U.S. Electricity Market”

IEFE Working Paper n. 39 – September
by Carmine Guerriero

“Water Scarcity and Virtual Water Trade in the Mediterranean”

IEFE Working Paper n. 38 – September
by Roberto Roson and Martina Sartori

“The Design of Industry Structure in a Vertically Related Market”

IEFE Working Paper n. 37 – July
by Raffaele Fiocco

“Time Varying Parameters Bayesian Forecasting of Electricity Demand: The Italian Case”

IEFE Working Paper n. 36 – July
by Margherita Grasso

“An Assessment on the Cost Structure of the UK Airport Industry: Ownership Outcomes and Long Run Cost Economies”

IEFE Working Paper n. 35 – May
by Anna Bottasso and Maurizio Conti

“Biofuels Policy in Europe under the Directive 2003/30: An Analysis of Goals, Hindrances, Instruments and Effects”

IEFE Working Paper n. 34 – May
by Augusto Ninni and Pietro Lanzini

“The Support Schemes for the Growth of Renewable Energy”

IEFE Working Paper n. 33 – May
by Arturo Lorenzoni

“A Comparative Analysis of Global City Policies in Climate Change Mitigation: London, New York, Milan, Mexico City and Bangkok”

IEFE Working Paper n. 32 – March

by Edoardo Croci, Sabrina Melandri, and Tania Molteni

“The Political Economy of Incentive Regulation: Theory and Evidence from U.S. States”

IEFE Working Paper n. 31 – March

by Carmine Guerriero

“Three-regime Threshold Error Correction Models and the Law of One Price: The Case of European Electricity Markets”

IEFE Working Paper n. 30 – March

by Margherita Grasso

“Climate Change Feedback on Economic Growth: Explorations with a Dynamic General Equilibrium model”

IEFE Working Paper n. 29 – January

by Fabio Eboli, Ramiro Parrado, and Roberto Roson

“How Does EMAS Affect Organizations’ Efforts and Competitive Rewards? Analysis of the Drivers, Barriers and Benefits Connected with the EU Scheme”

IEFE Working Paper n. 28 – January

by Fabio Iraldo, Pietro Lanzini, and Michela Melis

“The Health Effects of Climate Change: A Survey of Recent Quantitative Research”

IEFE Working Paper n. 27 – January

by Margherita Grasso, Matteo Manera, Aline Chiabai, and Anil Markandya

2009

“At Home and Abroad: An Empirical Analysis of Innovation and Diffusion in Energy-efficient Technologies”

IEFE Working Paper n. 26 – November

by Elena Verdolini and Marzio Galeotti

“Modeling Climate Change Mitigation Options: A Review of Tol’s Contribution to Copenhagen Consensus”

IEFE Working Paper n. 25 – November

by Roberto Roson

“Accountability in Government and Regulatory Policies: Theory and Evidence”

IEFE Working Paper n. 24 – September

by Carmine Guerriero

“Does Expected Supply Affect the Price of Emission Permits? Evidence from Phase I in the European System”

IEFE Working Paper n. 23 – September

by Andrea Beltratti, Paolo Colla, and Anna Creti

“The Productive Effect of Transport Infrastructures: Does Road Transport Liberalization Matter?”

IEFE Working Paper n. 22 – September
by Anna Bottasso and Maurizio Conti

“Integration of Electricity Markets in Europe: Relevant Issues for Italy”

IEFE Working Paper n. 21 – July
by Anna Creti, Eileen Fumagalli, and Elena Fumagalli

“The European Carbon Market in the Financial Turmoil: Some Empirics in Early Phase II”

IEFE Working Paper n. 20 – May
by Monica Bonacina, Anna Creti, and Simone Cozialpi

“Carbon Allowances as Inputs or Financial Assets: Lesson Learned from the Pilot Phase of the EU-ETS”

IEFE Working Paper n. 19 – April
by Monica Bonacina and Simone Cozialpi

“Can LNG Increase Competitiveness in the Natural Gas Market?”

IEFE Working Paper n. 18 – April
by Susanna Dorigoni, Clara Graziano, and Federico Pontoni

“Influencing Modal choice for Pollution Control: Feasibility, Costs and Benefits. The Case of an Indian Megacity, Kolkata”

IEFE Working Paper n. 17 – January
by Madhumati Dutta and Joysankar Bhattacharya

2008

“The Italian Energy Policy: Changing Priorities”

IEFE Working Paper n. 16 – November
by Annalisa D’Orazio and Clara Poletti

“Price-increasing; Monopolistic Competition? The Case of IES Preferences”

IEFE Working Paper n. 15 – September
By Paolo Bertoletti, Eileen Fumagalli, and Clara Poletti

“Some Economics of Seasonal Gas Storage”

IEFE Working Paper n. 14 – July
by Corinne Chaton, Anna Creti, and Bertrand Villeneuve

“Gas Storage Services and Regulation in Italy: A Delphi Analysis”

IEFE Working Paper n. 13 – July
by Monica Bonacina, Anna Creti, and Antonio Sileo

“LNG Development Across Europe: Infrastructural and Regulatory Analysis”

IEFE Working Paper n. 12 – May
by Susanna Dorigoni and Sergio Portatadino

“On the Robustness of Robustness Checks of the Environmental Kuznets Curve Hypothesis”

IEFE Working Paper n. 11 – May

by Marzio Galeotti, Matteo Manera, and Alessandro Lanza

“The Impact of Wide-Scale Sport Events on Local Development: An Assessment of the 20th Torino Olympics Through the Sustainability Report”

IEFE Working Paper n. 10 – April

by Marco Frey, Fabio Iraldo, and Michela Melis

“Ownership Separation of the Gas Transportation Network: Theory and Practice”

IEFE Working Paper n. 9 – March

by Susanna Dorigoni and Federico Pontoni

“Imperfectly Competitive Contract Markets for Electricity”

IEFE Working Paper n. 8 – January

by Monica Bonacina, Anna Creti, and Federica Manca

2007

“Natural Gas Distribution in Italy: When Competition Doesn’t Help the Market”

IEFE Working Paper n. 7 – November

by Susanna Dorigoni and Sergio Portatadino

“Liberalization and Private Sector Involvement in the Water Industry: A Review of the Economic Literature”

IEFE Working Paper n. 6 – September 2007

by Antonio Massarutto

“Take or Pay Contracts and Market Segmentation”

IEFE Working Paper n. 5 – July

by Michele Polo and Carlo Scarpa

“On Combining Stated Preferences and Revealed Preferences Approaches to Evaluate Environmental Resources Having a Recreational Use”

IEFE Working Paper n. 4 – May

by Vania Paccagnan

“A Cluster-based Approach for the Application of EMAS”

IEFE Working Paper n. 3 – May

by Marco Frey and Fabio Iraldo

“Interaction of Carbon and Electricity Prices under Imperfect Competition”

IEFE Working Paper n. 2 – May

by Liliya Chernyavska and Francesco Gulli

“Gas Storage and Security of Supply in the Medium Run”

IEFE Working Paper n. 1 – May

by Corinne Chaton, Anna Creti, and Bertrand Villeneuve

6. Research Report Series

In September 2009 the Center launched a new publication line which consists of the final reports of its research projects. The reports can be downloaded from the IEFE website (www.iefef.unibocconi.it).

2010

La generazione di energia elettrica in Italia a 10 anni dal Decreto Bersani. Risultati raggiunti e agenda futura

IEFE Research Report n. 7 – December

by Federico Boffa, Guido Cervigni, Annalisa D’Orazio, Diego Piacentino, Clara Poletti and Simone Spalletta

Gli investimenti all’estero in energie rinnovabili: l’Italia c’è?

IEFE Research Report n. 6 – September

by Annalisa D’Orazio and Federico Pontoni

La gestione integrata dei rifiuti urbani: analisi economica di scenari alternativi

IEFE Research Report n. 5 – March

by Antonio Massarutto, Alessandro de Carli and Matteo Graffi

2009

L’incentivazione della produzione di energia elettrica da fonti rinnovabili e assimilate attraverso il Provvedimento CIP n. 6/92. Un’analisi economica

IEFE Research Report n. 4 – December

By Clara Poletti, Federico Pontoni and Antonio Sileo

Prospettive di sviluppo delle energie rinnovabili per la produzione di energia elettrica. Opportunità per il sistema industriale nazionale

IEFE Research Report n. 3 – December

by Annalisa D’Orazio

Integrating European Electricity Markets

IEFE Research Report n. 2 – October

by Giuseppe Buglione, Guido Cervigni, Eileen Fumagalli, Elena Fumagalli and Clara Poletti

La regolazione economica dei servizi idrici

IEFE Research Report n. 1 – September

by Antonio Massarutto

7. Articles and Books

- Cretì A. and Fumagalli E. (2010), “Integration of Electricity Markets in Europe: Relevant Issues for Italy”, *Energy Policy*, 38, 6966-6976
- Cretì A. and Bonacina M. (2010), “A Note on Forward Contracts in Leader-Follower Games”, *Economics Bulletin*, 11, 1539-1547
- Croci E. (2010), “L’azione dei governi locali per il clima”, in F. Fracchia e M. Occhiena (Eds.), *Climate Change: la risposta del diritto*, Editoriale Scientifica
- D’Orazio A. and Poletti C. (2010), “Politica energetica e politica ambientale: tanti interventi nessuna strategia”, in E. Barucci, C. De Vincenti and M. Grillo (eds.), *Idee per l’Italia*, Milano: Francesco Brioschi Editore
- Frey M., Melis M. and Vagnoni E. (2010), “Recent Developments in Social and Environmental Reporting Among Italian Universities: A Critical Evaluation of Leading Edge Practices”, in M.G. Baldarelli (Eds.), *Civil Economy, Democracy, Transparency and Social and Environmental Accounting Research Role: Some Reflections in Theory and in Practice Deriving from 2nd CSEAR Conference-Italy*, Milano: McGraw-Hill
- Frey M., Iraldo F., Battaglia M. and Bianchi L. (2010), “An Innovative Model to Promote CSR among SMEs Operating in Industrial Clusters: Evidence from an EU Project”, *Corporate Social Responsibility and Environmental Management*, DOI: 10.1002/csr.224
- Iraldo F., Melis M. and Barberio M. (2010), “Supply chain, cluster e marchi di prodotto”, in R. Cariani (ed.), *Ecodistretti 2009 - Made ‘Green’ in Italy: le politiche ambientali dei sistemi produttivi locali e dei distretti industriali*, Milano: FrancoAngeli
- Iraldo F., Daddi T. and Testa F. (2010), “A Cluster-based Approach as an Effective Way to Implement the ECAP (Environmental Compliance Assistance Programme): Evidence from Some Good Practices”, *Local Environment*, 15, 73–82
- Iraldo F., Melis M. and Daddi T. (2010), “Il Piano d’Azione della Commissione Europea sulla Conformità Ambientale delle Pmi (Ecap) e la sua attuazione in Italia”, *Inquinamento – Tecnologie, Ambiente, Uomo*, n. 123, 32-35, April
- Iraldo F., Melis M. and Daddi T. (2010), “Semplificazione normativa e agevolazioni a favore delle aziende dotate di una certificazione ambientale: esperienze e linee evolutive”, *Inquinamento – Tecnologie, Ambiente, Uomo*, n. 121, 22-26, Jan.-Feb.
- Iraldo F., Testa F. and Johnstone N. (2010), “Shadows and Lights of GSCM (Green Supply Chain Management): Determinants and Effects of These Practices Based on a Multi-national Study”, *Journal of Cleaner Production*, 18, 953-962
- Iraldo F., Melis M. and Mauri M. (2010), “Esperienze e proposte di semplificazione e agevolazione certificate”, *Inquinamento – Tecnologie, Ambiente, Uomo*, n. 127, 52-55, Nov.-Dec.
- Iraldo F. and Cancila E. (Eds.) (2010), *Le certificazioni ambientali per le imprese, Metodologie, approcci operativi e casi di eccellenza*, Milano: Gruppo 24 ORE

- Iraldo F. and Melis M. (2010), “Il Regolamento Emas: caratteri specifici e attività integrative: un approfondimento sugli aspetti ambientali indiretti”, in F. Iraldo, E. Cancila (eds.), *Le certificazioni ambientali per le imprese, Metodologie, approcci operativi e casi di eccellenza*, Milano: Gruppo 24 ORE
- Kallis G., Ludwig R., Roson R. and Zografos C. (2010), “Climate Change Impacts on Water and Security: Orientations of the Research Foreseen over 2010-2013”, in P. Quevauviller, U. Borchers, K.C. Thompson, T. Simonart (Eds.), *Water Framework Directive - Action Programmes and Adaptation to Climate Change*, RSC Publishing
- Poletti C., Benini M., Borgonovo E., Clerici A., Parozzi F. and Troiani F. (2010), “Aspetti economici”, in Fondazione EnergyLab (Ed.), *Energia nucleare in Italia: come proseguire il percorso*, Gieedizioni, 159-180
- Roson R. (2010), “Carbon Dioxide Mitigation - Alternative Perspective”, in B. Lomborg (ed.), *Smart Solutions to Climate Change*, Cambridge: Cambridge University Press
- Roson R. (2010), “Last-mile Problem” and “Taxation”, items in K. Button, H. Vega, P. Nijkamp (Eds.), *Dictionary of Transport Analysis*, Edward Elgar
- Roson R. (2010), “Last-mile Problem”, in K. Button, H. Vega, P. Nijkamp, (eds.), *Dictionary of Transport Analysis*, Edward Elgar
- Roson R. (2010), “Taxation”, in K. Button, H. Vega, P. Nijkamp, (Eds.), *Dictionary of Transport Analysis*, Edward Elgar
- Roson R., Eboli F. and Parrado R. (2010), “Climate Change Feedback on Economic Growth: Explorations with a Dynamic General Equilibrium Model”, *Environment and Development Economics*, 15, 515-533
- Silvestrini A., Monni S., Pregernig M., Barbato A., Dallemand J.-F., Croci E. and Raes F. (2010), “The Role of Cities in Achieving the EU Targets on Biofuels for Transportation: The Cases of Berlin, London, Milan and Helsinki“, *Transportation Research Part A: Policy and Practice*, 44, 403-417
- Squicciarini G., Cervigni G., Perekhodtsev D. and Poletti C. (2010), *The Integration of the European Electricity Markets at a Turning Point: From the regional Model to the Third Legislative Package*, EUI Working Papers RSCAS 2010/56

8. IEFE Seminars and Conferences

IEFE has organized numerous seminars and conferences, listed below. Programs and presentations can be downloaded from the IEFE website (www.iefef.unibocconi.it)

14 January 2010

FEEM-IEFE Joint Seminar “**Politics and Economics of Second-Best Regulation of Greenhouse Gases: The Importance of Regulatory Credibility**” by Valentina Bosetti (FEEM)

22 January 2010

IEFE Seminar “**Energy Efficiency in Fossil-Fuel Electricity Generation: A Panel Data Empirical Analysis**” by Elena Verdolini (Università Cattolica di Milano and FEEM)

29 January 2010

IEFE Seminar “**Il Piano Clima del Comune di Milano**” by Sabrina Melandri (IEFE)

5 February 2010

IEFE Seminar “**L’industria fotovoltaica in italia**” by Arturo Lorenzoni (Università di Padova e IEFE)

9 February 2010

IEFE Seminar “**Biofuels Policy, Land Use Change, Uncertainty, and Time**” by Michael O’Hare (Goldman School of Public Policy, University of California, Berkeley)

11 February 2010

FEEM-IEFE Joint Seminar “**SuperSmart Grid: 100% renewable power sector in Europe by 2050**” by Antonella Battaglini (PIK-Potsdam Institute for Climate Impact Research)

4 March 2010

IEFE Seminar “**Abatement and Allocation in the Pilot Phase of the EU ETS**” by Barry Anderson (University College Dublin)

5 March 2010

IEFE Seminar “**Public Policies for a Sustainable Energy Sector: Regulation, Diversity and Fostering of Innovation**” by Valeria Costantini and Francesco Crespi (Università degli Studi Roma Tre)

11 March 2010

IEFE Seminar “**The Political Economy of (De)Regulation: Theory and Evidence from US States**” by Carmine Guerriero (University of Amsterdam and ACLE)

19 March 2010

IEFE Seminar **“An Assessment on the Cost Structure of the UK Airport Industry: Ownership Outcomes and Long Run Cost Economies”** by Anna Bottasso and Maurizio Conti (Università di Genova)

8 April 2010

FEEM-IEFE Joint Seminar **“Linking Individual and National Responsibility of Climate Mitigation: A Consumption Based Analysis of Global Emissions Distribution”** by Massimo Tavoni (FEEM)

16 April 2010

IEFE Seminar **“Impacts of the Carbon Prices on the Italian Power Sector”** by Anula Abeygunawardana (Politecnico di Milano)

23 April 2010

IEFE Seminar **“Causalità tra consumi di elettricità e crescita economica in Italia”** by Gaetano Vecchione (Università del Sannio)

30 April 2010

IEFE Seminar **“The Demographic Transition and the Ecological Transition: Enriching the Environmental Kuznets Curve Hypothesis”** by Marzio Galeotti (Università degli Studi di Milano and IEFE)

7 May 2010

IEFE Seminar **“Three-regime Threshold Error Correction Models and the Law of One Price: the Case of European Electricity Markets”** by Margherita Grasso (Enel SpA)

13 May 2010

FEEM-IEFE Joint Seminar **“The Impact of Unilateral Climate Policy with Endogenous Plant Location and Market Size Asymmetry”** by Francesca Sanna-Randaccio (Università La Sapienza di Roma)

19 May 2010

Seminar **“L'internazionalizzazione nel settore della produzione di energia da fonti rinnovabili”** organized by IEFE in collaboration with Ernst & Young within the Observatory on Renewable Energies – speech by Annalisa D'Orazio (IEFE)

21 May 2010

IEFE Seminar on **“China Beyond Copenhagen: Energy and Climate Change Policy”** by Bram Buijs (Clingendael Institute)

28 May 2010

IEFE Seminar on **“Gradi giorno e consumi gas: un approccio flessibile”** by Alessandro Fiorini (I-com) and Antonio Sileo (IEFE)

8 June 2010

Seminar **“Politiche e misure di promozione delle rinnovabili driver dell'internazionalizzazione”** organized by IEFE in collaboration with Ernst & Young within the Observatory on Renewable Energies – speech by Annalisa D'Orazio (IEFE)

10 June 2010

FEEM-IEFE Joint Seminar on **“Energy Abundance, Trade and Industry Location”** by Reyer Gerlagh (Tilburg University)

18 June 2010

IEFE Seminar **“Water Scarcity and Virtual Water Trade in the Mediterranean”** by Martina Sartori (Università degli Studi di Milano and IEFE)

25 June 2010

IEFE Seminar **“The Effect and Responsibility of CO2 Embodied in Italy-China Trade”** by Valeria Andreoni (University of Huddersfield)

2 July 2010

AIEE-IEFE Joint Seminar **“Verso l’auto elettrica: prospettive incoraggianti, ma anche problemi rilevanti”** - speeches by Michele Benini (ERSE), Edoardo Croci (IEFE), Gabriele Grea (CERTeT-Bocconi), Luca Lo Schiavo (AEEG), Augusto Ninni (Università di Parma and IEFE), Federico Santi (Fondazione Energia and AIEE), Antonio Sileo (IEFE)

8 July 2010

FEEM-IEFE Joint Seminar **“Out of Equilibrium Trade, Network Trading and Transaction Costs – An Agent Based Model of Agricultural Water Trade in the Murray Darling Basin”** by Thomas Longden (University of New South Wales and FEEM)

10 September 2010

IEFE Seminar **“Strategic Investment in Merchant Transmission: the Impact of Capacity Utilization Rules”** by Federico Boffa (Università di Macerata)

20 September 2010

Conference on **“Gli investimenti all’estero in energie rinnovabili: l’Italia c’è?”** organized by IEFE in collaboration with Ernst & Young

23 September 2010

FEEM-IEFE Joint Seminar **“Climate Change, Extreme Weather Events and International Migration** by Nicola Coniglio (FEEM)

8 October 2010

IEFE Seminar **“The Impact of New Nuclear Power Plants on Energy Price in Italy”** by Fulvio Fontini (Università di Padova)

21 October 2010

FEEM-IEFE Joint Seminar **“Climate Change and Economic Growth: Impacts and Interactions”** by Roberto Roson (Università Ca’ Foscari di Venezia and IEFE)

27 October 2010

Conference on **“La comunicazione ambientale. Politiche pubbliche e strategie aziendali nell’era della Green Economy”** organized by IEFE within the Osservatorio Comunicazione e Informazione Ambientale

18 November 2010

FEEM-IEFE Joint Seminar **“An Equilibrium Model of Habitat Conservation under Uncertainty and Irreversibility”** by Sergio Vergalli (Università di Brescia and FEEM)

13 December 2010

Conference on “**Bentornata efficienza energetica. Nuovi impegni degli stakeholder e nuove linee d’intervento nell’edilizia**” organized by IEFE in collaboration with Fondazione per lo Sviluppo Sostenibile and Federcasa

15 December 2010

Conference on “**Conformità ambientale e certificazione volontaria: una semplificazione possibile**” organized by IEFE (within the ECCELSA Life Plus Project)

16 December 2010

FEEM-IEFE Joint Seminar “**A Fair Price for Energy? Ownership versus Market Opening in the EU15**” by Carlo Fiorio and Massimo Florio (Università Statale di Milano)

9. Structure*

Working at IEFE are tenured professors and researchers from Università Bocconi and other universities, along with research fellows with contracts or grants connected to the Center itself, as well as expert consultants in specific areas. The Center is managed by the President, the Steering Committee, the Scientific Committee and the Members' Committee.

President Alberto Meomartini, Chairman of Assolombarda and of GNL Italia

Honorary President Renzo Capra

Director Clara Poletti

Research Fellows Isabella Alloisio, Michele Barberio, Monica Bonacina, Guido Cervigni, Anna Cretì, Edoardo Croci, Niccolò Cusumano, Alessandro de Carli, Annalisa D'Orazio, Andrea Fontanella, Marco Frey, Marzio Galeotti, Fabio Iraldo, Arturo Lorenzoni, Matteo Manera, Antonio Massarutto, Sabrina Melandri, Michela Melis, Alberto Minarelli, Tania Molteni, Augusto Ninni, Federico Pontoni, Roberto Roson, Martina Sartori, Antonio Sileo, Simone Spalletta, Olha Zadorozhna

Secretarial Office Lia Bertoglio

Administrative Office Pinuccia Ganda, Dora Milanese

* As of December 2010

10. Steering Committee*

Miguel Antoñanzas, E.ON Italia, Chairman of the Board of Management
Roberto Bazzano, Federutility, President
Giancarlo Cremonesi, Acea, Chairman
Bruno D'Onghia, EDF- Representative Office in Italy, Director
Pasquale De Vita, Unione Petrolifera, Chairman
Paolo Gallo, Edipower, CEO
Edoardo Garrone, Erg, Chairman
Piero Gnudi, Enel, Chairman
Gian Marco Moratti, Saras, Chairman
Umberto Quadrino, Edison, CEO
Luigi Roth, Terna, Chairman
Paolo Scaroni, Eni, CEO
Tomaso Tommasi di Vignano, Hera, Chairman
Giuliano Zuccoli, A2A, President of the Management Committee and Assoelettrica,
Chairman

De Jure Members

Alberto Meomartini, IEFÉ President
Bruno Pavesi, Chief Executive Università Bocconi, or his delegate
Clara Poletti, IEFÉ Director
Guido Tabellini, Rector Università Bocconi, or his delegate

* As of December 2010

11. Scientific Committee

President David Newbery, University of Cambridge (UK)

Members

Frank Convery, University College Dublin (IRL)

Claude Crampes, École d'Économie de Toulouse (F)

Thomas C. Heller, Stanford University, (USA)

François Lévêque, École des Mines, Paris (F)

Ignacio Pérez-Arriaga, Comillas University, Madrid (E)

Clara Poletti, IEFE Director (de jure)

Pippo Ranci, Università Cattolica del Sacro Cuore di Milano (I)

Carlo Scarpa, Università di Brescia (I)

Jonathan Stern, Oxford Institute for Energy Studies (UK)

Nils-Henrik von der Fehr, University of Oslo (N)

Catherine Waddams, University of East Anglia (UK)

12. Associated Companies and Organizations

1. **ABB:** Alessandro Clerici, Senior Advisor to the President
2. **ACEA:** Adolfo Spaziani, Studies and Research Director; Paolo Carta, Regulatory Affairs Market and Corporate Studies
3. **ACQUIRENTE UNICO:** Paolo Vigevano, CEO
4. **A2A:** Patrizia Savi, Planning, Finance and Control Director
5. **ALPIQ ENERGIA ITALIA:** Alessandro Ferrari, Director Business Development Department; Paolo Meneghini, Marketing Manager Business Development
6. **ANIGAS:** Luciano Buscaglione, Managing Director; Bruno Tani, Chairman
7. **ANSALDO ENERGIA:** Giuseppe Zampini, CEO
8. **ARPA EMILIA ROMAGNA:** Raffaella Raffaelli, Director of Department Integrated Management System: Quality, Health & Safety
9. **ASSOELETTRICA:** Stefano Pupolin, Managing Director; Antonio Livrieri, Technical Director
10. **ASSOGAS:** Sergio Sala, Managing Director
11. **CVA TRADING:** Paolo Giachino CEO; Danilo Angrilli, Environment Market Manager
12. **EdF- Representative Office in Italy:** Bruno D’Onghia, Director
13. **EDIPOWER:** Alberto Mariotti, Energy Management Director
14. **EDISON:** Umberto Quadrino, CEO
15. **ENEA:** Giovanni Lelli, Commissioner
16. **ENEL:** Simone Mori, Regulatory and Environmental Director
17. **ENI:** Paolo Scaroni, CEO
18. **ENI – DIV.NE GAS & POWER:** Domenico Dispenza, Managing Director
19. **E.ON Italia:** Miguel Antoñanzas, Chairman
20. **ERG:** Lucia Bormida, Authorities and Government Relations Manager
21. **ERG RIVARA STORAGE:** Grayson Nash, CEO; Roberto Bencini, Technical Director
22. **ESSO ITALIANA:** Piero Biscari, Public Affairs Manager; Nello Angelucci, Public and Government Affairs
23. **FEDERAMBIENTE:** Gianluca Cencia, Managing Director
24. **FEDERUTILITY:** Roberto Bazzano, Chairman; Adolfo Spaziani, Managing Director
25. **FOSTER WHEELER ITALIANA:** Rosa Maria Domenichini, Director of Power Division; Andrea Fava, Director of Environmental Division
26. **GME – GESTORE MERCATO ELETTRICO:** Massimo Guarini, CEO; Alessandro Talarico, Institutional Relations & Communication Director
27. **GNL Italia:** Alberto Meomartini, Chairman
28. **GSE – GESTORE DEI SERVIZI ELETTRICI:** Gerardo Montanino, Director of Operations; Costantino Lato, Engineering Unit Manager
29. **HERA:** Tomaso Tommasi di Vignano, Chairman; Giovanni Tagliatela, Regulatory Affairs Manager

30. **IREN ENERGIA:** Roberto Garbati, CEO
31. **REPOWER ITALIA:** Fabio Bocchiola, Chairman
32. **RINA:** Roberto Cavanna, Certification and Services Division Director; Paolo Teramo, Technical Manager
33. **SARAS:** Dario Scaffardi, Managing Director; Giuseppe Citterio, Margin Management
34. **SOGIN:** Fabio Chiaravalli, Environmental Area Manager
35. **TERNA:** Luigi Roth, Chairman; Luigi de Francisci, Regulatory Affairs Director
36. **UNICREDIT:** Giorgio Capurri, Corporate Sustainability - Group Identity and Communications Area
37. **UNIONE PETROLIFERA:** Pasquale De Vita, Chairman

13. Regulations for the Center for Research on Energy and Environmental Economics and Policy (IEFE)

Article 1 Scope of Application and Subject of the Regulations

- 1.1 These regulations, which were drawn up pursuant to Article 74 of the General University Rules (hereinafter referred to as “RGA”), apply to the Center for Research on Energy and Environmental Economics and Policy (IEFE) (hereinafter referred to as “the Center”), set up at Università Bocconi. They regulate its purpose, tools, organization, administration, evaluation and winding-up.
- 1.2 Pursuant to Article 27 of the Statute and Article 73 of the RGA, the Center is set up to promote and undertake specific research (applied research). The Center operates in the academic fields and areas of the Institute of Economics and the Institute of Corporate Economics and Management, and works with the Institute of Comparative Law.

Title I – Purpose and Resources

Article 2 Purpose

- 2.1 The purpose of the Center is described in terms of: a. research objectives; b. research methods and tools; c. methods
 - a. research objectives

The Center’s purpose shall be to coordinate and carry out research in economic dynamics and public policy issues in the following areas, using the foremost economic and quantitative analysis techniques:

 - a) economics and policies of the energy and natural, renewable and non-renewable resource markets;
 - b) environmental economics, focusing on issues of environmental policy and on issues of environmental management and sustainability in the private and public sectors;
 - c) economics of public utilities with particular reference to the energy and environmental sectors.

In carrying out its research, the Center shall make constant reference to Europe and abroad, with the aim of anticipating major fundamental issues in the energy sector and addressing the development of regulatory and energy policies in the light of the experience of other countries, primarily in Europe.
 - b. research methods and tools

The Center shall place a strong emphasis on interdisciplinary research, and shall from time to time add economic, management,

policy, technology and legal topics to its areas of research and investigation. It shall use theoretical, quantitative and descriptive tools. The tools used shall be those commonly used in the study of applied economics.

c. methods

The work of the Center in the area of research shall aim to:

- a) coordinate and undertake study and research and take part in joint research projects with other centers and research institutes;
- b) promote research initiatives;
- c) promote and organize conferences, meetings, seminars and other information initiatives;
- d) promote the circulation of the research results among associates, through the preparation and circulation of final reports and the production of an annual report;
- e) promote the circulation in the academic community of research results, through the publication of a series of working papers and articles in academic journals in Italy and abroad;
- f) publish books and a journal to disseminate the research results of the Center or of others;
- g) be part of national and international research center networks working in the same areas, and inter-university consortia or similar forms of collaboration;
- h) organize information exchange initiatives, including through monitoring centers, for the public and private sectors.

For administrative purposes, the Center may be divided into sections or divisions, or set up the most appropriate organizational structures.

2.2 The Center may carry out its work in collaboration with other Centers, and for other public or private sector bodies, subject to appropriate contracts or agreements, in accordance with the relevant administrative arrangements.

2.3 The Center shall not be a legal entity and all contracts and agreements shall be entered into by the University's legal representative (or his or her delegate) in accordance with the relevant administrative arrangements.

Article 3 Human, Financial and Other Resources

3.1 In carrying out its research work, the Center may call upon:

- the faculty of Università Bocconi or other universities and research institutes in Italy and abroad;
- consultants working specifically for the Center;
- external academics and specialists, including scholarship and fixed-term research contract holders, to undertake fixed-term tasks.

3.2 In carrying out its research work, the Center may call upon the University's administrative staff, bearing the associated costs.

3.3 In pursuit of its aims, the Center may make use of Università Bocconi spaces, facilities, services and equipment, bearing the associated costs.

Title II – Organizational Structure

Article 4 Structure of the Center

- 4.1 The Center shall formally comprise
- President
 - Director
 - Steering Committee
 - Scientific Committee
 - Members' Committee

Article 5 President

- 5.1 The President shall be appointed by the University Board at the nomination of the Rector in consultation with the Department Directors and members of the outgoing Steering Committee representing members.
- 5.2 The President shall remain in office for three years and may be reappointed.
- 5.3 The President shall represent the Center in dealings with public agencies, research institutes, international organizations, corporations operating in the energy and environment sectors, and public utilities.
The President shall call and chair meetings of the Members' Committee and the Steering Committee.
- 5.4 In consultation with the Director, the President shall propose appropriate initiatives to ensure external appreciation of the Center's results, especially by members.
- 5.5 The President and the Director shall jointly maintain relations with members.
- 5.6 The President may propose that the University Board appoint one or more Vice-Presidents from the Steering Committee, and may delegate his or her duties to them in the event of absence or incapacity.
- 5.7 The President may suggest to the Steering Committee that new members be admitted.

Article 6 Director

- 6.1 The Director shall be appointed by the University Board at the nomination of the Rector in consultation with the Department Directors.
The Director shall remain in office for three years and may be reappointed.
- 6.2 A first- or second-level Università Bocconi professor may be appointed Center Director. Other persons may be appointed Director at the proposal, giving grounds, of the Rector.
- 6.3 The Director shall:
- a) prepare a multi-year research plan on the basis of the recommendations of the Scientific Committee, and submit it to the Steering Committee;
 - b) produce, in the context of the multi-year plan, an annual research plan that identifies research projects to be undertaken during the year; the plan shall be submitted to the Scientific Committee for evaluation and to the Steering Committee for approval;
 - c) organize and run the Center in implementation of the multi-year plan and the annual research plan, and individual approved research projects; be responsible for the other work of the Center, consistent with the objectives set by the Steering Committee: in particular, allocate researchers and resources to the various research projects.

- d) inform the Steering Committee, in consultation with the Scientific Committee, about joint projects with other research centers in Italy or abroad;
 - e) oversee the recruitment and periodic evaluation of the Center's researchers;
 - f) organize internal seminars for Scientific and Steering Committee members for the discussion of the preliminary results of the most significant projects;
 - g) produce an annual report to be submitted to the Steering Committee, the Scientific Committee and the Members' Committee;
 - h) implement directives from the Steering Committee and the Scientific Committee;
 - i) undertake further initiatives developed during the year within the context of the guidelines approved by the Steering Committee and the Members' Committee;
 - j) maintain relations with members and ensure the circulation of research results;
 - k) prepare draft and final financial statements.
- 6.4 The Director of the Center shall present an annual report to the Rector and the Scientific Committee.
- 6.5 The Director shall also carry out all the other duties required by the national university laws.
- 6.6 The Director may designate one or more Deputy Directors, appointed by Rectoral Decree, to assist the Director and replace him or her in the event of absence or incapacity.

Article 7 Steering Committee

- 7.1 The Steering Committee shall comprise members by right and members' representatives elected by the Members' Committee; numbers shall be determined by the Members' Committee from a minimum of seven and a maximum of eighteen.
- 7.2 The Chief Executive of Università Bocconi or his or her delegate, the Rector or his or her delegate, the President, the Director and any Vice-Directors of the Center are members by right of the Steering Committee.
- 7.3 The Steering Committee shall:
- evaluate at least once a year, and approve, the multi-year plan and the research plan, and the individual research projects to be undertaken during the year and in general the work of the Center, and assess the results;
 - comment on the annual budget proposal prepared by the Director for submission to the University Board in accordance with the relevant administrative procedures;
 - support the Director in addressing the Center's main management issues;
 - make suggestions to the Director on activities and initiatives to enhance the image of the work and role of the Center;
 - set membership fees.
- 7.4 The Steering Committee may, at the proposal of the President, appoint an internal Executive Committee to which it may delegate its powers and capacities wholly or partly. The President and the Director shall report to the Steering Committee on the work of the Executive Committee.

- 7.5 The term of office of Steering Committee members shall be two years and shall expire at the same time as that of the President who appointed them. Members may be reappointed.

Article 8 Scientific Committee

- 8.1 The Scientific Committee shall comprise:
- the Director;
 - a minimum of three members appointed by the Rector at the proposal of the Center Director from persons or proven ability in the research areas of the Center.
- 8.2 The Scientific Committee shall be chaired by one of the members appointed by the Rector at the proposal of the Director of the Center. The President shall call meetings of the Scientific Committee at least twice a year, or when requested by the Steering Committee or the Director for specific reasons, and shall ensure maximum information provision and participation including through long-distance communication.
- 8.3 The President of the Scientific Committee may invite experts in relation to specific agenda items.
- 8.4 The Scientific Committee may make proposals as to directions or evaluations of areas to be developed in the research of Center and the work undertaken. Specifically, the Scientific Committee shall:
- develop proposals on the research paths and directions to be developed by the Center;
 - make and consider proposals for links and joint projects with other research centers in Italy or abroad;
 - provide the Steering Committee and the Members' Committee with an evaluation of the proposals in the multi-year research plan and the annual program produced by the Center Director, and of the individual research projects;
 - provide the Steering Committee and the Members' Committee with an evaluation of the research projects carried out during the year;
 - at the request of the Director, provide evaluations of studies and research for the purpose of publishing them in the series of working papers;
 - discuss and evaluate the criteria, procedures and standards used in the recruitment of new researchers;
 - assist the Director with the preparation of the annual report;
 - provide the Steering Committee with a report of meetings held.
- 8.5 The Scientific Committee may co-opt experts in the field, with an advisory vote.
- 8.6 The term of office of Scientific Committee members shall be three years and may be renewed.

Article 9 Members' Committee

- 9.1 Membership of the Center shall be open to organizations, associations and corporations. Their admission shall be decided by the Center's Steering Committee at the proposal of the President, and the proposal shall set out the conditions of their participation.
- 9.2 The Members' Committee shall be chaired by the President. It shall be an advisory and guideline body and each external member organization shall be represented by one person.

- 9.3 The Members' Committee shall meet at least once a year for the presentation of the annual plan and annual report pursuant to Article 6.4 above. It may make proposals in relation to the Center's activity.
- 9.4 The Members' Committee shall consider the draft and final financial statements and shall have the task of direction and assessment with regard to fees to the Center set by the Steering Committee.
- 9.5 If a member organization fails to meet its contribution commitment, its membership shall be revoked and the representative pursuant to Article 9.2 shall no longer sit on the Members' Committee.
- 9.6 Members may participate in all Center initiatives on a paying or non-paying, at the discretion of the Steering Committee. Members shall also have the right to use the Center library and to receive all Center publications, with the exception of custom research.

Title III – Administration, Evaluation and Winding-up

Article 10 Evaluation

- 10.1 The Center's work shall be evaluated in the ways and with the frequency set down by the evaluation program for University facilities and services, to assess their financial self-sufficiency.

Article 11 Administration and Accounting

- 11.1 Administrative and accounting management of the Center shall be regulated by the University's regulations on administration, finance and accounting.

Article 12 Duration, Winding-up and Liquidation

- 12.1 The Center shall have a maximum duration of five years which shall commence from the date of issue of these regulations, and which may be renewed. The request for renewal must be submitted by the Center's governing bodies at least six months from expiry. Renewal shall occur with the same procedure as for setting up. Each renewal may be for no more than five years.
- 12.2 The University Board, at the request of the Center or on its own initiative, may resolve to wind up the Center and carry out liquidation following the procedures set down for its setting up, in the following cases (among others):
- at the time of expiry of the period of duration;
 - because the purposes of the Center have been reached or it has become impossible to achieve them;
 - in the absence of a majority of members that is unable to be re-established within six months.

Title IV – Final Regulations

Article 13 Application

- 13.1 When these regulations come into effect they replace all previous regulatory provisions on this subject.

13.2 Where there is no specific provision in these Regulations, reference should be made to the national university laws on research and the regulations of the RGA where applicable.

Article 14 Amendments

14.1 These Regulations, approved by the University Board in accordance with Article 3 of the RGA, may be amended by the Board at the proposal of the office-holders of the Center.

Article 15 Coming into Effect

15.1 The coming into effect of these Regulations shall be established in the promulgating decree.

