



Current and Future Challenges to Energy Security

2nd AIEE Energy Symposium

2-4 November- Rome, Italy
LUMSA University

Preliminary Programme

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Thursday - November 2, 2017

16.00-19.00 **Registration**
16.30-17.30 - **Opening Welcome Address**
17.30-19.00 - **Welcome Cocktail**

Friday - November 3, 2017

08.30-17.00 - **Registration**
08.30-09.30- **Welcome coffee**

09.00-10.30 - Concurrent Sessions (1-4)

01 The impact of oil price fluctuation

Chair: Vittorio D'Ermo, AIEE, Italy

Does oil price plunge affect alternative energy growth? Evidence from dynamic panel model

Presenter: Ishaya Tambari, University of Portsmouth, UK

Author: Ishaya Tambari

Pricing characteristics in the German diesel fuel market after the introduction of the market transparency scheme

Presenter: Sebastian Kreuz, Brandenburg Technical University Cottbus-Senftenberg, Germany

Author : Sebastian Kreuz

Is Macroeconomic Effect of Oil Price Shocks Asymmetric? Evidence from India

Presenter: Rajesh Acharya, National Institute of Technology Karnataka, Surathkal, India

Authors: Rajesh Acharya, Anver C. Sadath

02 Promoting or imposing energy efficiency?

Chair: Manfred Weissenbacher, University of Malta, Malta

Is energy efficiency efficient for the European market?

Presenter: Carlo Scarpa, Università di Brescia, Italy

Author: Carlo Scarpa, Giovanna Landi

Using sticks or carrots to promote energy efficiency – how do individuals react?

Results of an experimental investigation

Presenter: Roland Menges, Clausthal University of Technology, Germany

Author: Roland Menges

Contracting the Gap: Empirical evidence on the role of energy performance contracting to promote investment in energy efficiency

Presenter: Ulrich Reiter, TEP Energy GmbH, Switzerland

Authors: Mehdi Farsi, Martin Jakob, Ulrich Reiter

03 Special session on Cognitive-based regulation for consumers empowerment

Chair: Nicoletta Rangone, University of LUMSA, Italy

Feedback and efficient behavior

Presenter: Luigi Mittone, University of Trento, Italy

Energy consumer empowerment in Italy

Presenter: Francesco Vetrò, University of Salento, Italy

Algorithmic regulation: the case of information disclosure

Presenter: Fabiana Di Porto, University of Salento, Italy

How to improve the functioning of electricity retail markets: push or pull?

Presenter: Clara Poletti, AEEGSI - Italian Energy Authority for Electricity, Gas and Water System

European Issues and trends of regulation
Presenter: Valeria Scorsoni, Energy expert, Italy

04 Global assessment of energy security, efficiency and sustainability
Chair: Antonio Geracitano, EOS Consulting, Italy

Evaluating the Implication of COP21 for Energy Security at Member State and EU Level

Presenter: Elena Stolyarova, Grenoble Applied Economics Lab, CNRS, France
Authors: Elena Stolyarova, Sandrine Mathy, Silavana Mima

The financial performance of firms under the EU Emissions Trading Scheme (EU ETS)

Presenter: Georgia Makridou, ESCP Europe Business School
Authors: Georgia Makridou, Michael Doumpos, Kostas Andriosopoulos, Emiliós Galariotis

A dynamic analysis approach to evaluating energy security of 30 countries

Presenter: Hui Bin Du, Tianjin University, China
Author: Hui Bin Du

Carbon tax, EU ETS versus charge on emissions

Presenter: Gianluca Carrino, LUMSA University
Author: Gianluca Carrino

10.30-11.30 - Dual Plenary Sessions

EU towards 2030

Chair: Agime Gerbeti, Adjunct Professor, LUMSA University, Italy
Francesco Scalia, Senator and Secretary of the 10th Permanent Commission - Industry, Trade, Tourism
Samuele Furfari, Adviser to the Director General of DG Energy at the European Commission
Simone Mori, President Elettricità Futura, Italy

Regulation of energy markets

Chair: Alessandro Ortis, President Stati Generali dell'Efficienza Energetica
Pippo Ranci, Università Cattolica, Italy
Jean-Michel Glachant, Director of the Florence School of Regulation and Holder of the Loyola de Palacio Chair at the European University Institute, Italy
Giuseppe Gatti, President Energia Concorrente

11.30-13.00 - Concurrent Sessions (5-8)

05 The gas market: new perspectives?

Chair: Arnaldo Orlandini, ICEI, University Complutense of Madrid, Spain

The current and future role of natural gas in China

Presenter: Alec Waterworth, Warwick Business School, UK
Authors: Alec Waterworth, Michael J. Bradshaw

The Economics of Gazprom's gas export strategies to Europe

Presenter: Chi-Kong Chyong, EPRG, University of Cambridge, UK
Author: Chi-Kong Chyong

Energy transition and the role of LNG on the future of South America: How can LNG impact the energy security of the Southern Cone?

Presenter: Seyed Mohsen Razavi, Gas Exporting Countries Forum, Qatar
Author: Seyed Mohsen Razavi

Forecasting models for short and long term gas price

Presenter: Raffaele Troise, Enel, Italy
Authors: Claudio Pregagnoli, Raffaele Troise, Claudio Dicembrino, Michele Frate

06 Energy efficiency in buildings and industry

Chair: Spiros Papaefthimiou, Technical University of Crete, Greece

The longer term effects of home energy efficiency investments

Presenter: Daire McCoy, Grantham Research Institute, London School of Economics
Author: Daire McCoy, Antoine Dechezlepretre, Francois Cohen

Energy Efficiency in buildings: a simple but accurate way to perform calculations

Presenter: Giuseppe Dell'Olio, GSE, Italy
Author: Giuseppe Dell'Olio

**Environmental and energy efficiency analysis of EU electricity industry:
An almost spatial two stages DEA approach**

Presenter: Maria Chiara D'Errico, University of Perugia, Italy

Author: Simona Bigerna, Carlo Andrea Bollino, Maria Chiara D'Errico e Paolo Polinori

07 Special Session: Day-ahead, Intra-day and Balancing Markets

Chair: Angelica Gianfreda, Free University of Bozen-Bolzano, Italy

What drives balancing prices: the Italian case

Presenter: Lucia Parisio, DEMS -University Milano-Bicocca, Italy

Authors: Angelica Gianfreda, Lucia Parisio e Matteo Pelagatti

Unbalances and market rules in Italian wholesale electricity market

Presenter: Stefano Clo', University of Milano,

Author: Angelica Gianfreda, Stefano Clo'

Quantile merit order effects and network upgrades

Presenter: Alessandro Sapio, Parthenope University of Naples, Italy

Author: Alessandro Sapio

Imbalances costs of small scale renewable not dispatchable power plants in the Italian electricity market

Presenter: Nicola Sorrentino, University of Calabria, Italy

Authors: Nicola Sorrentino, Daniele Menniti, Anna Pinnarelli

Demand participation in electricity balancing markets

Presenter: Elena Fumagalli, Polytechnic University of Milan, Italy

Author: Bastian Westbrook, Elena Fumagalli

08 Modeling the new environment

Chair: Cecilia Camporeale, Italian Ministry of Environment – A.T. Sogesid, Italy

IT-DAMEE: a regional application to assess the macro-effect of RDP fund in Emilia Romagna

Presenter: Cecilia Camporeale, Italian Ministry of Environment – A.T. Sogesid

Authors: Roberto Del Ciello, Cecilia Camporeale

Energy mix optimization from an energy security perspective based on stochastic models

Presenter: Yaser Kananimaman, Sharif University of Technology, Iran

Authors: Yaser Kananimaman and Abbas Maleki

A look at Energy Law: Legal challenges presented by new technologies

Presenter: Daria Capotorto, Agnoli e Giuggiolo Law Firm, Italy

Author: Daria Capotorto

13.00-14.00 Lunch buffet

14.00-15.30 - Dual Plenary Sessions

Economic instruments and transition pathways to a low-carbon economy in the industrial sectors

Chair: Gurkan Kumbarglu, Bogazic University - Past President IAEE, Turkey

Suresh Jagadesan, Managing Director, Adriatic LNG*

Luca Bragoli, Head of International & Institutional Affairs, ERG, Italy

Salvatore Pinto, President of Axpo, Italy

Claudio Spinaci, President Unione Petrolifera, Italy

Stefano Cuzzilla, President FEDERMANAGER, Italy

Europe Roadmap and the future strategies of the energy industry

Chair: Giovanni Ferri, Professor and Deputy Rector at LUMSA University

Manfred Hafner, Partner and Vice-President Consulting of Enerdata, France

Paolo Gallo, CEO Italgas, Italy*

Luigi Michi, Strategy and Development Manager Terna, Italy

Dario Di Santo, Managing Director Italian Federation for Energy Efficiency – FIRE, Italy

* invited, to be confirmed

15.30-17.00 - Concurrent Sessions (9-12)

09 Commodity Pricing
Chair: Nicolò Sartori, IAI, Italy

Asymmetric risk spillovers between oil and agricultural commodities

Presenter: Syed Jawad Hussain Shahzad, Montpellier Business School, France
Author: Syed Jawad Hussain Shahzad

Evaluation of oil & gas firms' financial performance: cash flows vs. accounting earnings

Presenter: Bård Misund, University of Stavanger Business School, Norway
Author: Bård Misund

Natural Gas Market Prediction via Statistical and Neural Network Methods

Presenter: Mona Shokripour, Gas Exporting Countries Forum (GECF), Qatar
Author: Mona Shokripour

Financial instruments to mitigate the risk of climate change: rainfall and temperature

Presenter: Silvana Stefani, University Bicocca, Italy
Author: Silvana Stefani

10 Energy and Industrial Competitiveness
Chair: Agime Gerbeti, LUMSA University, Italy

The environmental impact of photovoltaic panels imported from China compared to Germany in a central Mediterranean setting

Author Manfred Weissenbacher, Stefan Montebello
Presenter: Manfred Weissenbacher

Carbon pricing instruments for implementing the objectives of the Paris agreement

Presenter: Mario Iannotti Ministry of Environment, Land&Sea
Author: Mario Iannotti Ministry of Environment, Land&Sea

The revision of EU climate energy policies in the context of the Paris Agreement

Presenter: Fabrizio Fabbri, European Parliament, Italy
Author: Fabrizio Fabbri

Mexico's Low Carbon Futures: An Integrated Assessment for Energy Planning and Climate Change Mitigation by 2050

Presenter: Alexandre Strapasson, Harvard University, United States
Authors: Elizondo Alejandra, Vanessa Pérez-Cirera, Alexandre Strapasson, José Carlos Fernández, Diego Cruz-Cano

Industrial competitiveness from the legal perspective

Presenter: Daria Capotorto, Agnoli e Giuggiolo Law Firm, Italy
Author: Daria Capotorto

11 Strategic contribution of energy storage to energy security
Chair: Silvana Stefani, University Bicocca, Italy

Issues contributing to energy insecure conditions in military organizations: a case study of vulnerabilities and opportunities facing the Colombian Navy

Presenter: Jaime Gonzalez, Colombian Navy – Grenoble Ecole de Management, France
Author: Jaime Gonzalez, David Grover

Spot trading profits of energy storage systems in the region covered by EPEX SPOT

Presenter: Maria Kaninia, Electrical Engineer, MSc ETHZ, Switzerland
Author: Maria Kaninia

Energy storage in wind turbines: a strategic contribution to energy security

Presenter: Giuseppe Dell'Olio, GSE SpA, Italy
Author: Giuseppe Dell'Olio

12 The union of national energy markets

Influence of interconnections on market prices - Spanish case of study

Presenter: Cristina González Ventosa, Red Eléctrica de España, Spain
Authors: Cristina González Ventosa, María Sonsoles Madejon Concejal;
Luis Villafruela Arranz, Ana Isabel Abril Pérez

Investigation of Advantages from Future Integration of Wind Electricity in EU

Presenter: Christian Spindler, University of Vienna, Austria
Authors: Christian Spindler, Yuri Yegorov, Franz Wirl

Critical analysis of the “new” Italian capacity remuneration mechanism

Presenter: Paolo Mastropietro, Institute for Research in Technology, Comillas Pontifical University, Spain

Author: Paolo Mastropietro, Fulvio Fontini, Pablo Rodilla, Carlos Battle

Increasing interconnections in a small, open economy: a quantitative evaluation of its effects

Presenter: Danielle Devogelaer, Federal Planning Bureau, Benelux Association for Energy Economics, Belgium

Author: Danielle Devogelaer

Modernizing energy markets through cooperation mechanism

Presenter: Agime Gerbeti, LUMSA University, Italy

Author: Agime Gerbeti

Saturday- November 4, 2017

08.30-17.00 - **Registration**

08.30-09.30 - **Welcome coffee**

09.00-10.30 - Concurrent Sessions (13-16)

13 Innovation for energy systems

Sustainability assessment of hybrid Photovoltaic/Thermal (PV/T) technologies

Presenter: Spiros Papaefthimiou, Technical University of Crete, Greece

Author: Manolis Souliotis, Spiros Papaefthimiou

Developing an energy transition pathway for a low carbon fuel distribution system for decentralized communities

Presenter: Abhishek Agarwal, Robert Gordon University, UK

Author: Abhishek Agarwal, Shane Wilson, Rotimi Ajuwon

Comparison of the solar photovoltaic irrigation system sized by CPM with the traditional irrigation system and irrigation system powered by diesel generator

Presenter: Bojan Đurin, Faculty of Geotechnical Engineering, University of Zagreb, Croatia

Author: Bojan Đurin, Lucija Baić, Shpetim Lajqi, Drilon Meha

14 Bioenergies

Arbitrations for bioenergy use in the 21st century energy context: the significance of gasification and methanisation

Presenter: Gabin Mantulet, CNRS LPSC - CNRS GAEL, France

Authors: Gabin Mantulet, Adrien Bidaud, Silvana Mima

Lignocellulosic biorefineries as replacement of fossils

Presenter: Himadri Roy Ghatak, Sant Longowal Institute of Engineering & Technology, India

Author: Himadri Roy Ghatak

Securing local energy supply through municipal energy autonomy: assessing the technical and economic feasibility in a German context

Presenter: Russell McKenna, Karlsruhe Institute of Technology (KIT), Germany

Authors: Russell McKenna, Jann Weinand, Lorenz Braun, Carsten Herbes

Factors influencing prices for heat from biogas plants

Presenter: Carsten Herbes, Nuertingen-Geislingen University, Germany

Authors: Carsten Herbes, Verena Halbherr, Lorenz Braun

15- The energy-economy nexus

Chair: Jose Maria Labeaga Azcona, Open University Madrid, Spain

Economic growth, CO2 emissions, fossil fuels consumption and renewable energy consumption in Australia

Presenter: Patrícia Hipólito Leal, University of Beira Interior, Portugal

Authors: António Cardoso Marques, José Alberto Fuinhas, Patrícia Hipólito Leal

The impact of electricity generation by sources on the economic growth: the case of Spain

Presenter: Daniela Pereira Macedo, University of Beira Interior, Portugal

Authors: António Cardoso Marques, José Alberto Fuinhas, Daniela Pereira Macedo

16 The Electricity market: risks and opportunities

Chair: Lucia Visconti Parisio, University Bicocca, Italy

Managing the liberalization of Italy's retail electricity market: A policy proposal

Presenter: Carlo Stagnaro, Bruno Leoni Institute

Author: Carlo Stagnaro, Carlo Amenta, Luciano Lavecchia

Key Driving Factors of Electricity Price Risk: Evidence from Turkey

Presenter: Volkan Alacam, Energy Market Regulatory Authority, Turkey

Author: Volkan Alacam, Mustafa Gozen

Electricity grid evolution in Europe pre-access Countries: the Turkish case

Presenter: Gaia Moretti, Ianus Consulting and Development Srl-LUMSA University, Italy

Author: Gaia Moretti

The Ideal Competitive Electricity Market. a simulation for Italy

Presenter: Carlo Andrea Bollino, AIEE, Italy

Author: Carlo Andrea. Bollino, Simona Bigerna, Paolo Polinori, Maria Chiara D'Errico

The blockchain challenge for the electricity system

Presenta: Alessio Pinzone, AREA Rided - Polytechnic University of Milan, Italy

Autori: Alessio Pinzone, Fabrizio Armani.

10.30-11.30 - Dual Plenary Sessions

Energy security of supply and market developments

Chair: Marco Margheri, President WEC Italia*

Kostas Andriosopoulos, Executive Director, Research Centre for Energy Management (RCM), Greece

Chicco Testa, President, Sorgenia, Italy

Gianni Murano, President Esso Italiana, Italy

Sustainable mobility challenges for the transition targets

Chair: Carlo Andrea Bollino, President AIEE, Italy

Linda Meleo, Rome City Hall Mobility Councilor, Italy

Emanuele Proia, Deputy Director, ASSTRA (Italian Association of Public Transport Operators) Italy

Ernesto Ciorra Head of Innovation and Sustainability, Enel

11.30-13.00 - Concurrent Sessions (17-20)

17 Technology development - Grid management

Sustainability assessment of hybrid Photovoltaic/Thermal (PV/T) technologies

Presenter: Spiros Papaefthimiou, Technical University of Crete, Greece

Author: Manolis Souliotis, Spiros Papaefthimiou

Big Data and Cloud Computing technologies applied to the energy sector: from buzzwords to market optimization through an SaaS solution

Presenter: Alessandro Piacentini, Dogma Enterprise, Italy

Author: Alessandro Piacentini

Considering Hydrogen Fuel Cells Powertrain as Power Generation Plant - 2017 review

Presenter: Mario Valentino Romeri, Energy consultant, Italy

Author: Mario Valentino Romeri

18 Scenarios and forecasting methodologies

Chair: Giancarlo Scorsoni, Energy Advisor, Italy

Energy World in 2040: a scenario approach

Presenter: Manfred Hafner, Enerdata, France

Author: Manfred Hafner

Forecasting the distributions of hourly electricity spot prices

2METE: An Ecological Macroeconomic Model for Energy Transition. Alternative Scenarios Towards Ecological Sustainability and Social Equity

Presenter: Simone D'Alessandro, Department of Economics and Management, University of Pisa

Author: Simone D'Alessandro

19 Climate policy and emission trading

Chair: Ionut Purica, Advisory Center for Energy and Environment, Romania

Curbin carbon emissions: is a carbon tax the most efficient levy?

Presenter: José María Martín-Moreno, University of Vigo, Spain

Author: José María Martín-Moreno, Jorge Blázquez, Rafaela Pérez, Jesús Ruiz

Mapping carbon emissions embodied in inter-regional trade of China: final goods, intermediate goods and value chain

Presenter: HuiBin Du, Tianjin University, China

Author: HuiBin Du, Zengkai Zhang

Welfare Effects of Pollution Permit Trading

Presenter: Georgi Kalchev, American University in Bulgaria, Bulgaria

Author: Georgi Kalchev

Energy volatilities and the cost of security

Presenter: Ionut Purica, Advisory Center for Energy and Environment, Romania

Author: Ionut Purica

20 The multiple paths of electricity demand

Determinants of residential demand for electricity in South Africa

Presenter: Jessika A. Bohlmann, University of Pretoria, South Africa

Author: Jessika A. Bohlmann, Heinrich Bohlmann

Incentivising households to reduce electricity consumption: a meta-analysis of the experimental evidence

Presenter: Penelope Buckley, Université Grenoble Alpes, France

Author: Penelope Buckley

Impacts of Prosumers on DSO Investments: Updating Tariff Structures

Presenter: Golnoush Soroush, Politecnico di Torino, Italy

Authors: Golnoush Soroush, Carlo Cambini

The evolution of price and income elasticities of electricity demand in Latin American countries: A time varying parameter approach

Presenter: David López Soto, Inter-American Development Bank, Mexico

Authors: David López Soto, Rodrigo Nicolás Aragón Salinas

13.00-14.00 **Lunch buffet**

14.00-15.30 - **Concurrent Sessions (21-24)**

21 The energy-environment nexus

Chair: Alberto Pincherle, AIEE, Italy

The impact of economic growth on the CO2 emissions in Australia: environmental Kuznets curve and decoupling index

Presenter: Patrícia Hipólito Leal, University of Beira Interior, Portugal

Authors: António Cardoso Marques, Patrícia Hipólito Leal, José Alberto Fuinhas

Air pollution externalities in Greek ports and airports

Presenter: George Nikoloudakis, Technical University of Crete, Greece

Author: George Nikoloudakis, Spiros Papaefthimiou

Assessing the economic impacts of climate change on competition for water resources in the framework of the water-energy nexus: a hybrid general equilibrium approach for Portugal

Presenter: Carla Teotónio, Universidade de Aveiro, Portugal

Author: Carla Teotónio, Miguel Rodriguez-Mendez, Peter Roebeling, Patrícia Fortes da Silva

22 Energy supply and security

Chair: Fatma Çiğdem Çelik, İstanbul Okan University, Turkey

Capital rationing. A threat to energy security

Presenter: Petter Osmundsen, University of Stavanger, Norway

Author: Petter Osmundsen, Magne Emhjellen

Constructing a Taiwan's energy security analysis of liquefied nature gas by system dynamic model

Presenter: Kuei-Lan Chou, Industrial Technology Research Institute, Taiwan

Author: Kuei-Lan Chou

Similarities and Differences in Views on Energy Security. A Comparison of Public and Stakeholder Perceptions in Germany

Presenter: Diana Schumann, Forschungszentrum Juelich GmbH, Institute of Energy and Climate Research, IEK-STE: Systems Analysis and Technology Evaluation, Germany

Authors: Diana Schumann, Sophia Dieken

23 Integrating renewables in energy markets

Chair: Francesco Asdrubali, Roma Tre University, Italy

Estimation of Bidding Curves for Active Distribution Networks

Presenter: Maria Teresa Vespucci, University of Bergamo, Italy

Authors: Maria Teresa Vespucci, Paolo Pisciella, Giacomo Viganò, Marco Rossi, Diana Moneta

Feed-in-tariff, quota obligation and tenders for renewable support: Comparison with regard to innovation, investment incentives and strategic behavior

Presenter: Philip Dees, Friedrich-Alexander-Universität Erlangen-Nürnberg, Institute of Economics, Germany

Author: Philip Dees

Technical due diligence analysis on onshore wind projects: case study

Presenter: Antonio Geracitano, EOS Consulting, Italy

Author: Antonio Geracitano, Chiara Ruggiero, Emanuele Riccobene

24 A new shape for electricity systems

Chair: Carlo Mari, University of Chieti-Pescara, Italy

Evaluation of risks for power plant operators through reconfiguration of price zones in extended Central Western Europe

Presenter: Tim Jonathan Felling, House of Energy Markets and Finance, University Duisburg-Essen, Germany

Author: Tim Jonathan Felling, Caroline Deilen, Robin Leisen, Christoph Weber

The electricity market price: volatility, pattern and forecast analysis

Presenter: Kun Li, Beijing Normal University, China

Author: Kun Li, Joseph D. Cursio

Long-term transmission capacity planning in a scenario with high share of variable renewable energies

Presenter: Stéphane Allard, G2Elab, University Grenoble Alpes, France

Authors: Stéphane Allard, Silvana Mima, Vincent Debusschere, Tuan Tran, Patrick Criqui, Nouredine Hadj-Saïd

The electric system at the time of choices : an ecosystem that creates value for France

Presenter: Alex Menu, Sciences Po Paris - Energy, Environment and Regulation, France

Author: Alex Menu