Principal

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Dr. Francesco Lo Passo is a Partner of the Brattle Group and Principal in the Rome office. He has a wide experience in regulation, privatization and restructuring processes primarily in Italy and throughout the world. He has worked for institutions such as the Italian Treasury and Consob, NERA Economic Consulting and Bain, Cuneo e Associati. He has also been lecturer in the Doctorate Program in Economics of the Università "La Sapienza" in Rome and at the OECD Advisory Group on Privatization. A former member of the Council of Experts of the Italian Treasury, he was in 2004 senior advisor on energy of the Ministry of Foreign Affairs. Francesco is listed in the The International Who's Who of Competition Lawyers & Economists.

Dr. Lo Passo's clients include leading companies in the energy, transport, and telecommunications sectors, investment banks, and institutional bodies in major European countries, Turkey, South Africa, India and the Middle East. He has advised clients on market and regulatory issues including tariff design, cost of capital estimation for regulated companies, capacity payments, gas transmission tariffs, network codes, revenue neutrality mechanisms, unbundling of regulatory accounts, design and implementation of a competitive mechanism for electricity procurement, and incentive mechanisms for renewable energy sources. He has also supported his clients in defining their regulatory strategy during market reforms, and assisted throughout the market due diligence processes to provide specific insights on the regulatory issues relevant for the evaluation and critical assessment of expected developments in the regulation that help clients identify risks and investment opportunities.

EDUCATION

1994	University of Chicago – Chicago, USA - Ph.D. in Economics
1988	University of Chicago – Chicago, USA
1986	Scuola Enrico Mattei – Milan, Italy - Diploma (MBA Equivalent)
1985	University of Turin (Law Department) – Turin, Italy - I.D. (Summa cum laude)



AREAS OF EXPERTISE

- International Arbitration
- Regulatory Finance & Accounting
- Electric Power
- Natural Gas
- Telecommunications & Media
- Transportation
- Utility Regulatory Policy & Ratemaking
- Valuation

EXPERIENCE

2012 – present	The Brattle Group Rome office Principal
2001 – 2012	NERA Economic Consulting Rome office Head of Rome Office, Associate Director and since 2006 Director
1997–2001	Bain, Cuneo e Associati Rome office Consultant and then Manager
1996-1997	OECD Advisory Group on Privatization Paris office Participant on behalf of the Officer in charge of privatizations at the Italian Treasury
1995-1997	Italian Ministry of the Treasury Rome Member of the Council of Experts
1991-1994	CONSOB (Italian Security Commission) Rome Funzionario – Stock Market Department and Research Department
1988 – 1990	University of Chicago Chicago Doctoral Fellow



Regulatory and Market Due Diligence Experience

- Assessment of investment opportunities and forecast of electricity prices in Turkey.
- Assistance in the regulatory due diligence in sale of generating assets in the Turkish market; the project includes the analysis of the energy market regulation and projections of electricity prices.
- Assistance in the regulatory due diligence in view of the acquisition of generating assets in the Turkish market; the project included the analysis of the energy market regulation, of the market for renewable resources and projections of electricity prices
- Market and regulatory due diligence in view of the acquisition of an electricity distributor in Turkey.
- Assistance in evaluating an investment in a coal generating plant in Turkey. The project involved the forecast of wholesale electricity prices in Turkey and the assessment of the overall viability of the plant.
- Assistance in forecasts of electricity prices in Turkey in view of the acquisition of a Turkish distribution company
- Assistance in the due diligence process and in the negotiation with the regulator to have the additional WACC for new investments applied also in case the storage facility starts operation after the end of the regulatory period.
- Regulatory and market due diligence for the acquisition of a gas distribution network.
- Regulatory due diligence in order to take into account changes in the regulation of green certificates in the context of a project financing.
- Regulatory and financial due diligence for the acquisition of a gas storage field in Italy.
- Regulatory due diligence regulatory and assessment of the value of green certificates in the context of a project financing.
- Regulatory and market due diligence for the acquisition of a stake of an Italian airport.
- Regulatory and market due diligence for the acquisition of a gas distribution network.
- Regulatory and market due diligence for the project financing of a CIP 6 plant.
- Regulatory and market due diligence for the acquisition of gas distributors.
- Regulatory and market due diligence for the acquisition of a gas storage field and a CGT Plant.



- Evaluation on the building and of a new LNG plant for import and regasification, and of a pipeline for gas export to Italy.
- Regulatory and financial due diligence for the acquisition of shares of a toll road company.
- Regulatory and financial due diligence for the acquisition of an Italian airport.
- Regulatory and financial due diligence for the acquisition of shares of an Italian airport.
- Assistance in building a model of the Russian electricity market and assessment of the likely evolution of the electricity and gas markets in view of the acquisition of a Russian generator and gas fields.
- Assistance in the assessment of the regulatory risk of an acquisition of gas storage in Netherland and in the evaluation of revenues of gas storage modulation.
- Assistance to the evaluation and due diligence of a company operating in gas transportation, in reference to its acquisition.
- Advice on the evaluation of investments in renewable electricity in Italy, the projects required estimating supply and demand of green certificates and the price for the years 2005-2010 in Italy.
- Assessment of investment opportunities and forecast of electricity prices in Turkey.

Electricity Experience

- Assistance on different strategic and regulatory issues relating to the electricity and gas markets.
- Assistance on all regulated segments of the electricity industry in Italy.
- Assistance on the pay-as-bid mechanism proposed by the Italian Government as new price setting rule for the Italian Electricity Market.
- Assistance on the remuneration of *must-run-plants*.
- Assistance on the evaluation of futures and options to be allowed by the Italian Stock Exchange on the average hourly electricity price (PUN).
- Advice on the new investment incentive approach to be followed in the third regulatory period for electricity distribution.
- Analysis of different aspects, such as the ancillary services market, the mechanisms of import capacity allocation, and the process of liberalization of the market in the main



European countries (with particular focus on the opening process of the residential market).

- Advice on the draft legislation which on the new green certificates mechanism to applied
 in Italy. Analysis of profitability and associated costs of the proposals for a 15 years period.
 The study was used by the client to submit counter proposals which were included in
 final legislation.
- Assistance in building a model of the Russian electricity market and assessment of the likely evolution of the electricity and gas markets.
- Assistance in regulatory strategy in view of the complete opening of the Italian market of 1 July 2007.
- Analysis of incentive schemes to renewable energy sources in major European countries
 and evaluation of alternative proposals to reform the green certificates scheme in Italy.
 The assignment required the estimation of the expected green certificates' price under the
 different schemes, the analysis of the impact of proposed alternative schemes on
 company's investments in renewables and on electricity system's costs.
- Advice to on wholesale market simulation and bidding strategy, National GHG plan, CDM and JI
- Advice to in building a model of economic dispatching for the years 2005-2010
- Advice in procurement of electricity for non-eligible customers in Italy (in December 2005 the Single Buyer signed innovative differential contracts for 16,725 MW)
- Advice on designing the proposal of capacity payment mechanism for Italy and quantification of capacity revenues for each generator.
- Advice to a major Italian utility on WACC and how to estimate the regulatory asset base (RAB) for transmission and distribution for the new regulatory period, and on procurement electricity auctions.
- Advise on electricity procurement auction strategy.
- Build data base of Generation Company with expected new plants for a major electric company in Italy.
- Regulatory strategy in Italy and analysis of the energy taxation with particular focus on carbon tax structure for a major electric company.
- Advised a major Italian utility on regulatory strategy in the power sector. This included consideration of auctions for import capacity, treatment of stranded costs, settlement



mechanisms, compensation mechanism for costs of distributors, quality of services in distribution, internal training courses.

Gas Experience

- Assistance to a European TSO in the definition of the Security of Supply Levy.
- Assistance to a pipeline company during the regulatory review for introduction of entryexit gas transport tariffs for the regulatory period 2013-2016.
- Analysis of the cost of capital.
- Analytical assessment of gas storage in Italy and expected evolution.
- Assistance on the updating of the new meters plan to be submitted for public consultation.
- Assistance on the tariff proposals for the third regulatory period.
- Assistance on the new meters plan to be submitted to the Regulator.
- Assistance in regulated issues in gas distribution for the third regulatory period.
- Analysis of the Russian gas market, its regulatory framework and evolution, supply and demand scenario and projection of gas prices. The project involved the calculation of gas transportation costs within Russia using a *netback* approach.
- Study on the value of gas in the Italian market as determined by gas-to-gas competition.
- Study on the value of gas in the Italian market as determined by an interfuel competition.
- Update of a previous study on comparative levels and structure of gas transport charges in Italy, UK, Spain, France and Germany.
- Assistance in metering, gas not accounted for and related regulation for the whole gas chain. The assignment required the analysis of international pipelines.
- Assistance in the description of: (i) market segmentation (residential, industrial, thermoelectric, wholesales); (ii) sales prices and quantities to identify market segments.
 Our activity included the analysis of marketing margins by sector over a range of price scenarios and regulatory scenarios and the description of the European and Italian Regulatory scenario.
- Assistance on natural gas supply costs (both existing pipeline gas and LNG contracts with an analysis of the relationship to crude oil on an energy parity basis), transportation costs to and through the Italian system, storage tariffs and balancing costs, description of market segmentation.



- Assistance in drafting the proposal to the regulator of the beta value of gas transportation business. Advice on the issues, which might arise from the consultation document for the second regulatory period, including regulatory and comparators betas, WACC, Price Cap and Revenue Cap, X-efficiency factor on opex and depreciation.
- Study on comparative levels and structure of gas transport charges in Italy, UK, Spain,
 France and Germany.
- Advice to the Task Force on Energy of the Italian Ministry of Foreign Affairs. Task included the development of a gas strategy for the Ministry with emphasis on imports.
- Study on principles of regulation in electricity and gas; international benchmark.
- Study on the comparative levels and structure of gas transport charges in Italy, UK, Spain,
 France and Germany. The study involved an analysis of storage and LNG plants regulation.
- International economic scenario for energy products (Brent and derivatives used as pricing benchmarks, exchange rates, etc.)
- Analysis of the Decree 311/01 of the Regulator (AEEG) and a survey of the obligations of disclosure of information that gas companies have to fulfill in terms of: (i) unbundling of activities; (ii) unbundling of services; (iii) allocation of common costs; (iv) allocation of financial costs and taxes; (v) depreciation; (vi) treatment of construction work in progress.
- Draft of specific sections of its proposed Network Code to be submitted to the Italian Regulator (AEEG). Assisted the utility in the design of the sections on demand forecasts, quality of service and updating procedures. Also assisted in negotiations over the revenue neutrality of the utility's business operations and on the supplier of last resort role.

Transport Experience

International Airports

- Assistance on the regulatory issues related to the implementation of the new regulatory framework and of the new tariff system in India.
- Review on the multi-year tariff regulation for Prague Airport in the view of its privatization, involving among other things the calculation of the regulatory asset base (RAB), costs' allocation and implementation of tariff setting principles in accord to the international best practice.
- Assistance in the review of the regulatory model in South Africa. Design of a financial model on a time horizon of 15 years, in order to modify regulatory period and price cap



parameters. Update of the model to calculate the cost of capital. Analysis of clawback mechanisms.

- Advice on the evaluation of the scope for the creation of a hub and the proper hub strategy, in compliance with the regulatory framework in charge in Spain. The results of the analyses were used to create value in the Spanish aviation industry.
- Assistance on all regulatory issues relating to the proposal of the new price cap 2007-2012 in South Africa.
- Development of the financial regulatory model designed the proposals and negotiated the new tariffs with the airlines in South Africa.
- Assistance on claw-back and dual till vs. single till, South Africa.
- Assistance on all regulatory issues relating to the request of a new price cap: regulatory financial model, WACC estimate, claw-back dispositions, RAB, dual till and past regulation, South Africa.

Italian Airports

- Assistance on the regulatory issues during the negotiation process with regulator for the draft of the new Program Contract.
- Assistance on the regulatory-financial issues related to the new tariffs to be implemented.
- Expert consulting in connection with the legal controversy on the tariffs/costs of SAGAT airport infrastructures.
- Expert testimony on behalf of an airline in a litigation involving an airport charge.
- Assistance to an airline during the consultation process of the airport regulator for the approval of Cagliari Airport program contract.
- Assistance in the draft of the new permission document updated with the new tariff scheme.
- Assistance on regulatory issues during the draft of the new price cap regulatory document.
- Assistance in the draft of the new permission document and in the relationship with ENAC, NARS and CIPE.
- Updated the regulatory financial model of an airport to take into account the new draft regulation.



- Advice on the new regulatory framework under discussion. The projects included the assessment of the impact of the inclusion of State Financed Assets in the RAB.
- Assistance in the negotiation of the contract program and on regulatory financial modeling.
- Assistance in the answer to the consultation on the guidelines of the new CIPE Decree.
- Assistance in the process of consultation launched by the government on airport tariffs regulation.
- Study of the proposals on airports regulation in Italy and assessment of the likely impact.
- Estimate of WACC, RAB and the economic principles of airports. The project involved a critic evaluation of the government proposals and the drafting of proposals.
- Analysis of the proposed legislation introducing a single till regulation in Italy. Position paper on the impact of the new regulation on airports in Italy.
- Review of current regulation of tariffs; evaluation of ADR Regulatory Asset Base; assessment of parameters for the new price cap regime; presentation of our study at a hearing with the Government.
- Advice on the restructuring of the Italian Air Traffic Control manager (Enav). The project required the reorganization of the entity, drafting of the business plan, forecast of tariffs, revenues and costs. The restructured entity was then incorporated and privatized.

Other transport experience

- Preliminary regulatory assessment of an Italian toll road. Update the functioning toll road model.
- Analysis of inter-modal competition of six long distance railway routes.
- Assistance in the new proposal of railway passenger tariffs for medium/long distance transportation.
- Assistance on the review of passenger and freight transportation and infrastructure management for railway in Europe, US and Japan.
- Member of the working group of the Government for the assessment of USO costs and new price cap formula for railways. Tasks involved WACC estimation and identification of quality of service component.
- Assistance in the price cap review for the second regulatory period. Tasks included survey
 of best regulatory practices; international benchmarking; WACC estimate; Regulatory
 Asset Base; efficiency factor; analysis of existing regulation in other sectors.



Telecommunication and Postal Experience

- Assistance to a European Postal Service on their regulatory accountings.
- Assistance to the Ministry of Communication in the consultation process for the liberalization of the postal sector. Identification of main topics and preparation of a questionnaire for postal operators.
- Valuation of the x-factor of efficiency for fixed network. Quantitative analysis to evaluate the relative efficiency of TI (Stochastic Frontier Analysis, Data Envelopment Analysis, OLS)
- Evaluation of mobile termination WACC and calculation of the CCA RAB.
- Assistance on the design of a model to calculate the impact of the market liberalization on 2009.
- Assistance on mobile telephony regulatory issues. Evaluation of WACC and validation of the Historical Costs Full Distributed on the mobile termination.
- Review of the proposal of the Authority proposal on local loop price. Development of a methodology and a price further implemented by the Regulator.
- Report on the transition from the Fully-Distributed Historical Cost to the Forward-Looking Incremental Cost regulation

Competition Policy

- Analysis of the alleged anticompetitive conduct of a competitor (abuse of dominant position under art. 82 of the EC Treaty). Analysis of the relevant market and design / implementation of a predatory pricing test.
- Analysis of policy issues related to diffusion of credit cards and estimation of expected impact on the Italian market.
- Analysis of the impact on the Italian generation market of the merger of a major Italian player and a European player.
- Quantification of the economic damage in an antitrust proceeding in the sponsorship sector.
- Analysis of price structure and taxation in a proceeding involving an American company about a presumed cartel agreement in Europe
- Determination of the relevant market in an antitrust proceeding in the credit market



Water

- Seminar on the "Legge Galli" introduction of a new tariffs calculation method, the socalled "normalized method, and modification proposals.
- Assessment of environmental resources cost in water pricing under EC 60/2000.
 Accounting for the environmental costs in the calculation of water pricing.
- Assistance on various restructuring hypothesis and regulatory methodology in the water and other sectors.
- Assistance on the restructuring options of the water service in the Sicily. Definition of the requirements needed for private participation.

Public Policy

- Calculation of an index to evaluate the competitive disadvantage due to insularity for Sicily and Sardinia.
- Definition of an index of the higher costs due to insularity.
- Economic analysis of the impact of the Laws 488 and 215 on the occupation and health in the Reggio Calabria province.

Other Experience

- Assistance to a Government in the privatization of a mobile telecommunication provider.
 Tasks included development of the industrial plan the telecommunication company; determination of price cap mechanism for World Bank /national Regulator; negotiation of interconnection charges with fixed telephony operator; international benchmarking and best practice; privatization.
- Assistance to a Government in the privatization of Telecommunication Company. Tasks
 included development of its industrial plan and business strategy; determination of price
 cap and cost-based tariffs; costs and revenues of urban and rural telephony; public
 telephony.

PROFESSIONAL AFFILIATIONS

- **2002-present.** Member of the Italian Association of Energy Economists.
- 2003-2004. Senior Energy Advisor of the Italian Ministry of Foreign Affairs Task Force
- **2003-2005. Expert** Regulation Advisor for NARS/CIPE work group. Advice on Trenitalia contract of service and revision of Price Cap determination methodology.



ACADEMIC HONORS AND FELLOWSHIPS

Enrico Mattei '85, Francesco Ferrara '86, Francesco Ferrara '87, Einaudi Foundation '88, University of Chicago '89, Sloan Foundation '89

PUBLICATIONS

'A Tale of Two Crises: The Betas of EU Networks' Discussion Paper, Francesco Lo Passo, Dan Harris, July 2013.

'Calculating the Equity Risk Premium and the Risk-free Rate' Dan Harris, Bente Villadsen, Francesco Lo Passo, 26 November 2012, prepared for the NMa and OPTA.

Prove di class action. Formiche, Ed. 59, May 2011.

Per finanziare le opera privati e patto di stabilità più flessibile. Francesco Lo Passo and Paolo Emilio Signorini. Il Sole 24 Ore. 1 December 2010.

Italian Class Actions Eight Months In: The Driving Forces. Francesco Lo Passo, Renzo Comolli, Massimiliano De Santis. 16 September 2010. (NERA's Paper).

Energia, il mercato reale alla fine vince sul mercato virtuale. Milano Finanza, 30 June 2010.

Mercato elettrico secondo NERA. Quotidiano Energia 20 January 2010.

Servizi pubblici locali. Ma una legge non basta. Formiche, Ed. 43, December 2009.

Infrastrutture. Come evitare una nuova bolla. Formiche, Ed. 40, August/September 2009.

Reform of Italian Water Services Tariff Calculations. NERA Working paper

The EU Directive on Airport Charges: Principles, Current Situation, and Developments. Francesco Lo Passo e David Matthew. *NERA White paper.*

Flexibility Mechanisms in the Proposal of EU Directive on Renewables, GME Newsletter, Issue 13, February 2009

La distribuzione di gas: riassetto, tariffe e sostenibilità degli investimenti. AREL, Osservatorio Energia e Ambiente, 1/2009

Il settore idrico. Confindustria. Scenari economici Centro Studi, 3/2008

Developing a Capacity Payment Mechanism in Italy (with Hamish Fraser), The Electricity Journal, Volume 16, Issue 9, November 2003

Assistance to SNAM Rete Gas for the development of the Network Code (with Leonardo Giacchino, Fabrizio Hernandez and Graham Shuttleworth) NERA Project Profile, August 5, 2003



Import Allocation Capacity in the Italian Electricity Market (with Marcella Fantini), NERA White Paper, February 3, 2003

"Privatization and the Ownership Structure of Public Utilities" (with Alfredo Macchiati), in The Privatization of Public Utilities. The Case of Italy. Londra: MacMillan

"Fiscal crises, balance constraints and Public Utilities efficiency" (1997). L'Industria

"Privatization and the Ownership Structure of Public Utilities", with Alfredo Macchiati. Rivista di politica economica

"The proprietary assets in the public utility privatization", with Alfredo Macchiati. Rivista di politica economica

"Italian State Owned Enterprises: An Empirical Study of Changes in Agency Costs". Ph.D. Dissertation: University' of Chicago

"Exchange rates and currency union". (1994). Rassegna economica

"Coase's theorem". (1992). Economia e credito

"Factor price equalization and Technical Progress". Economia, Società e Istituzioni.

"The Aggregation in a representative consumer". (1990). Economia, Società e Istituzioni

PRESENTATIONS

"Il Servizio idrico integrato. Soluzioni moderne per una riforma della regolazione." Seminar organized by HERA S.p.A., Acea S.p.A., Veolia Acqua, 30 June 2010.

"Mercati energetici italiani. Tendenze e prospettive". Festival dell'Energia, Lecce 21 May 2010

"La riforma del mercato elettrico in Italia e le lezioni desumibili dall'esperienza internazionale", Annual Report GME, Roma, May 2009.

"Regolamentazione del settore della distribuzione di gas, bancabilità degli investimenti e intersezione tra approcci giuridici ed economici", AREL, Roma, April 2009.

"The impacts of the Italian Electricity Futures and the Italian New Gas Exchange", ICOM, Rome, October 2008.

"Pay-as-bid, mercato del dispacciamento e interazioni tra borsa del gas e mercato elettrico, relazione annuale GME, Rome, July 2008

"Financing of Investments in Airports according to the new Regulatory Framework of Decree CIPE 38/2007: International Experience and National Application", Workshop Assaeroporti-Confindustria-Council of Ministry, Roma, February 2008.



"Assessment of Competition in the European Energy Markets", World Energy Conference, Roma, November 2007.

"Restructuring and Privatization of National Oil Companies", Marsh NOC' Seminar, Dubai, February 2007.

"Interaction between ETS, Green Certificates and White Certificates Schemes", Bruxelles, June 2006.

"Airports and Economic Growth: Infrastructure, Regulation and Impact on Italy, Rome, May 2006.

"The New Regulation of Airports and its Impact on Airports Sustainability", Alghero, March 2006.

"The European Challenges on Energy Markets", Turin, February 2006.

"The Competition between Trains and Other Forms of Transportation", Rome, November 2005.

"Economic Regulation of Electricity and Gas Industries in Croatia, Poland, Romania and Turkey," presentation at Synergy 2005, Rimini, November 2005.

"Regulation of Tariffs in Italy: the Role of Price Cap Regulation", presentation at a Consumer Forum Conference, Rome, June 2005.

"Network Codes and Access Rules", presentation at GRIFF/Luiss Workshop, Rome, March 2005.

"Reconsidering Government Subsidies Provided in Support of Underdeveloped Areas", Reggio Calabria, February 2005.

"Capacity Payments: a Proposal for Italy", presentation at AIEE-NERA Conference, Rome, June 2004.

"Electricity Deregulation in Europe", presentation at Marsh Power & Utilities Practice European Forum, Zurich, March 2004.

"Capacity payments: international experience and proposals for Italy", presentation at Autorità Energia Elettrica e il Gas, Milan, March 2004.

"International experience in the methodology of regulatory assets valuation", seminar organized by NARS/CIPE, Rome, February 2004.

"The restructuring of the water sector in Italy", Fourth Global Forum on Reinventing Government, seminar organized by the Italian Prime Ministry, Marrakech December 2002.

"The energy market in Italy", lesson for Master in Public Utilities, Istituto C. Jemolo, Rome November 2002.

"Analysis and Comparison of *public utilities* in the European Union", seminar organized by the High School of Public Administration, Italian Prime Ministry, Caserta 2002.

"The opening of the Italian Electricity market", conference organized by AIEE, Italian Organization of Energy Economists and NERA, Rome 2002.



"Internet and the new industry organization", Conference "Capital Markets in the age of Euro" organized by Cedif, University of Genova, Max Planck Institute, University College of London, University of Ghenz, Genova 2000.

"The efficiency of the Italian banking system", conference organized by Università Cattolica and Consob, Milan, July 1997.

"ENI and IRI Privatizations", paper presented at the Conference "The new frontiers of Economic Policy IV", IGIER- Bocconi University, Milan, June 1997.

"Liberalizations, deregulations and privatizations", Conference "Privatizations in East Europe", OCSE, Paris, April 1997.

"Fiscal crises, balance constraints and Public Utilities efficiency", paper presented at CNR, Rome, January 1997.

"Economic-financial aspects of privatizations: objectives, modalities and actors", paper presented to the General Direction of Italian Treasury, Rome, November 1996.

"Proprietary assets in privatized utilities", paper presented at the conference CEIS-Università Tor Vergata, June 1996.

"Energy industry regulation and privatization processes", Scuola Superiore Enrico Mattei, Milan, April 1996.

