

Personal information

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Date of birth

Gender

Barquín Gil, Julián

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Spanish

April 2nd, 1964

Male

University degrees

Physics graduate, UNED University, Madrid, 1993

Ph. D. in Electrical Engineering, Universidad Pontificia Comillas, Madrid, 1992

Electrical Engineer, Instituto Católico de Artes e Industrias (I.C.A.I.), Universidad Pontificia Comillas, Madrid, 1988.

Present position

2000 - Present Professor of Electrical Engineering, Universidad Pontificia Comillas, Madrid.

Previous Occupations

1993 - 2000 Lecturer of Electrical Engineering, Universidad Pontificia Comillas, Madrid.

Languages

Mother tongue(s)

*Self-assessment
European level^(*)*

English

Spanish

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2 Proficient user	C2 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user

^(*) Common European Framework of Reference (CEF) level

Teaching activity

1993 - Present. Lecturer in the Electrical Engineering School. Courses in Electromagnetic Theory, Power Systems Operation and Control, and Energy Economics

2001 - Present. Lecturer of the Master Program (500 hours) on "Technical and Economic Management of the Electric Power Sector", Comillas University.

Supervised Ph. D. Thesis

Strategic analysis of the long-term planning of electric generation capacity in liberalised electricity markets. J. J. Sánchez Domínguez, Universidad Pontificia Comillas, January, 2009.

A electricity market possibilist medium-term model. A. Campos Fernández, Universidad Pontificia Comillas, February, 2006.

Analysis of the operation of medium-term electricity generation markets. J. Reneses Guillén, Universidad Pontificia Comillas, May, 2003.

Electricity generation business risk analysis C. Batlle López, Universidad Pontificia Comillas, December, 2002.

Selective modal analysis algorithms improvement for power systems small signal stability studies H. R. Vargas, Universidad Pontificia Comillas, July, 2002.

Short-term operation optimization and bids making in a deregulated power system. J. García González, Universidad Pontificia Comillas, March, 2001.

Publications

I. Pérez-Arriaga, J. Barquín, *Investing for Sustainability, Electricity Reform In Europe. Towards a Single Energy Market* Edward Elgard Publishing, 2009

A. Kiss, J. Barquín, M. Vázquez, *Can closer integration mitigate market power? A numerical modelling exercise, Towards more integration of central and eastern energy markets* REKK, Budapest 2006

P. Linares, J. Barquín, *La política energética, Política socioeconómica en la Unión Europea* Delta Publicaciones, Madrid 2006

J. Barquín, *Energía: técnica, economía y sociedad*, Publicaciones de la UPCo, Madrid 2004

E. Centeno, J. Barquín, J. I. de la Fuente, A. Muñoz, M. Ventosa, J. García-González, A. Mateo, A. Martín-Calmarza, *Competitors Response Representation for Market Simulation in the Spanish Daily Market, Modelling Prices in Competitive Electricity Markets* Wiley, London 2004

J. L. Polo, J. Barquin, *Fall-out estimation by lagrangian and random walk models, Measurements and modelling in environmental pollution* Computational Mechanics Publications, 1997

F.A. Campos, J. Villar, J. Barquin, J. Reneses, *Variational inequalities for solving possibilistic risk-averse electricity market equilibrium*, IET Generation, Transmission and Distribution, 2, no. 5, 632-645, September, 2008

J. Barquín, M. Vázquez, *Cournot Equilibrium Calculation in Power Networks: An Optimization Approach With Price Response Computation*, IEEE Trans. on Power Systems, 23, no. 2, 317-326, May, 2008

F. A. Campos, J. Villar, J. Barquín, J. Ruipérez, *Robust mixed strategies in fuzzy non-cooperative Nash games*, Engineering Optimization, 40, 459-474, May, 2008

J. Barquín, *Convergencia gas-electricidad y cierre de mercado*, Revista de Economía Industrial, 365, 49-54, November, 2007

I. Pérez-Arriaga, P. Linares, C. Batlle, J. Barquín, *The Major Elements for a Global Climate Strategy Beyond 2012*, IAEE Newsletter, Fall, -26, November, 2007

- C. Batlle, C. Vázquez, J. Barquín, *The Balancing Market Maker: A Tool to Enhance Liquidity in the French Balancing Mechanism*, The Electricity Journal, 20, no. 6, 76-86, July, 2007
- E. Centeno, J. Reneses, J. Barquín, *Strategic Analysis of Electricity Markets Under Uncertainty: A Conjectured-Price-Response Approach*, IEEE Trans. on Power Systems, 22, 423-432, February, 2007
- F. A. Campos, J. Villar, J. Barquín, *Robust Cournot Strategies in Electricity Markets using Possibilistic Optimization.*, WSEAS Transactions on Business and Economics, 3, no 3, 93-100, March, 2006
- J. Barquin, L. Bergman, C. Crampes, J-M. Glachant, R. Green, C. von Hirschhausen, F. Lévêque, S.Stoft, *The Acquisition of Endesa by Gas Natural: Why the Antitrust Authorities are Right to Be Cautious.*, The Electricity Journal, 19, no. 2, 62-68, March, 2006
- J. Reneses, E. Centeno, J. Barquín, *Coordination Between Medium-Term Generation Planning and Short-Term Operation in Electricity Markets*, IEEE Trans. on Power Systems, 21, 43-52, February, 2006
- J. Barquin, L. Bergman, C. Crampes, J-M. Glachant, R. Green, C. von Hirschhausen, F. Lévêque, S.Stoft, *The acquisition of Endesa by Gas Natural: an antitrust perspective*, Journal of Network Industries, 6, 213-226, December, 2005
- J. Barquín, E. Centeno, J. Reneses, *Stochastic Market Equilibrium Model For Generation Planning*, Probability in the Engineering and Informational Sciences, 19, 533-546, August, 2005
- F. A. Campos, J. Villar, J. Barquín, *Application of Possibility Theory to Robust Cournot Equilibrium in the Electricity Market*, Probability in the Engineering and Informational Sciences, 19, 519-531, August, 2005
- K. Neuhoff, J. Barquin, M. G. Boots, A. Ehrenmann, B. F. Hobbs, F. A. M. Rijkers, M. Vazquez, *Network-constrained Cournot models of liberalized electricity markets: the devil is in the details*, Energy Economics, 27, 495-525, May, 2005
- C. Batlle, J. Barquin, *A Strategic Production Cost Model for Electricity Market Price Analysis*, IEEE Trans. on Power Systems, PWRS-20 no. 1, 67-74, February, 2005
- J. Barquin, E. Centeno and J. Reneses, *Medium-term marginal costs in competitive generation power markets*, IEE Proceedings. Generation, Transmission and Distribution, 151-5, 604-610, September, 2004
- C. Batlle, J. Barquín, *Fuel prices scenario generation based on a multivariate GARCH model for risk analysis in a wholesale electricity market*, International Journal of Electrical Power and Energy Systems, 26 / 4, 273-280, May, 2004
- J. Barquin, E. Centeno and J. Reneses, *Medium-term generation programming in competitive environments: a new optimisation approach for market equilibrium computing*, IEE Proceedings. Generation, Transmission and Distribution, 151-1, 119-126, January, 2004
- J. Barquin, T. Gomez, J. J. Alba, *Reactive Power Pricing: A Conceptual Framework for Remuneration and Charging Procedures*, IEEE Trans. on Power Systems, PWRS-15 no. 2, -, May, 1995
- J. Barquin, T. Gomez, F. L. Pagola, *Estimating the loading limit taking into account voltage collapse areas*, IEEE Trans. on Power Systems, PWRS-10 no. 4, -, November, 1995
- J. Barquín, *Symmetry properties of conjectural price responses*, IEEE General Meeting 2008, Pittsburgh, Pennsylvania, USA, July 20 to July 24, 2008.

- J. J. Sánchez, J. Barquín, E. Centeno, A. López-Peña, *A Multidisciplinary Approach to Model Long-Term Investments in Electricity Generation: Combining System Dynamics, Credit Risk Theory and Game Theory*, IEEE General Meeting 2008, Pittsburgh, Pennsylvania, USA, July 20 to July 24, 2008.
- J. García-González, J. Barquín, P. Dueñas, *A hybrid approach for modeling electricity price series in the medium term*, 16th Power Systems Computation Conference - PSCC 08, Glasgow, UK, July 14 to July 18, 2008.
- E. Centeno, J. Barquín, A. López-Peña, J.J. Sánchez, *Effects of gas-production constraints on generation expansion*, 16th Power Systems Computation Conference - PSCC 08, Glasgow, UK, July 14 to July 18, 2008.
- J. Barquín, *Energy auctions for regulated demand in the Iberian market: a proposal*, EEM 08 - 5th International Conference on the European Electricity Market, Lisbon, Portugal, May 28 to May 30, 2008.
- J. Barquín, *Modeling market power in absence of historical information: the conjectural response approach*, Third International Conference on Electric Utility Deregulation and Restructuring and Power Technologies - DRPT 2008, Nanjing, China, April 6 to April 9, 2008.
- J. Barquín, *Una propuesta para el mecanismo de subastas de distribución en el MIBEL*, III Congreso de la Asociación Española para la Economía Energética, Bilbao, Spain, January 17 to January 18, 2008.
- J.J. Sánchez, J. Barquín, E. Centeno, A. López-Peña, *System Dynamics models for generation expansion planning in a competitive framework: oligopoly and market power representation*, 25th International Conference of the System Dynamics Society, Boston, Massachusetts, USA, July 29 to August 2, 2007.
- F. Fernández-Menéndez, J. Barquín, *Discrete decisions, plants revenues and prices in electricity markets*, XCLEEE, 10th Portuguese-Spanish Conference in Electrical Engineering, Funchal. Madeira, Portugal, July 5 to July 7, 2007.
- C. Batlle, J. Barquín, *Emission Rights Allocation Criteria*, IEEE General Meeting 2007, Tampa, Florida, USA, June 24 to June 28, 2007.
- I. Pérez-Arriaga, P. Linares, C. Batlle, J. Barquín, *Summary Report*, Forum on Global Climate Strategies Beyond 2012: The Route Ahead. Looking for a consensus framework, Madrid, Spain, April 11 to April 13, 2007.
- J. Barquín, P. Rodilla, C. Batlle, C. Vázquez, M. Rivier, *Modeling market power: the Spanish White Paper approach*, Power Systems Modelling 2007, Athens, Greece, June 5 to June 8, 2007.
- J. Barquín, P. Linares, J. Montes, J. I. Pérez Arriaga, *El riesgo de las fuentes energéticas*, IX Fórum de la Seguretat, Barcelona, Spain, November 23 to November 23, 2006.
- N. Mosquera, J. Reneses, J. Barquín, E. F. Sánchez-Úbeda, *Risk analysis in electricity markets by using decision trees*, 9th Probabilistic Methods Applied to Power Systems Conference, Stockholm, Sweden, June 11 to June 15, 2006.
- Miguel Vázquez, Julián Barquín, Carlos Batlle, *Electricity forward and volatility curves computation based on Monte Carlo simulation*, 9th Probabilistic Methods Applied to Power Systems Conference, Stockholm, Sweden, June 11 to June 15, 2006.
- Julián Barquín, *Critically-congested Nash-Cournot equilibria in electricity networks*, 9th Probabilistic Methods Applied to Power Systems Conference, Stockholm, Sweden, June 11 to June 15, 2006.
- F. Alberto Campos, Jose Villar, Julian Barquín, *Possibilistic Cournot Equilibrium for Electricity Markets*, 7th WSEAS International Conference on Fuzzy Systems, Cavtat, Croatia, June 12 to June 14, 2006.

Julián Barquín, *Gas-Electricity Mergers and Input Foreclosure: A Quantitative Study*, 3rd International Conference, The European Electricity Market. EEM-06. Challenge of the Unification, Warsaw, Poland, May 24 to May 26, 2006.

Julián Barquín, *Limitaciones de los modelos de simulación de mercados de energía eléctrica*, I Congreso de la Asociación Española para la Economía Energética, Madrid, Spain, January 16 to January 17, 2006.

Juan José Sánchez, Efraim Centeno, Julián Barquín, *System Dynamics Modeling for Electricity Generation Expansion Analysis*, Power Systems Control Conference, Liege, Belgium, August 22 to August 26, 2005.

Javier Reneses, Natalia Mosquera, Efraim Centeno, Julián Barquín, *Water resources valuation in competitive environments*, 9th. Spanish-Portuguese Congress on Electrical Engineering , Marbella, Málaga, Spain, June 30 to July 2, 2005.

Ignacio Hoyos, Julián Barquín, Efraim Centeno, Juan José Sánchez, *Risk analysis of fuel and CO₂ prices volatility in electricity generation expansion planning*, 9th. Spanish-Portuguese Congress on Electrical Engineering , Marbella, Málaga, Spain, June 30 to July 2, 2005.

Félix Fernández-Menéndez, Begoña Vitoriano, Julián Barquín, *Cross-border electricity trading modelling: a market equilibrium approach*, 9th. Spanish-Portuguese Congress on Electrical Engineering , Marbella, Málaga, Spain, June 30 to July 2, 2005.

Jorge Muñoz-Estrada, Noemi Jiménez-Redondo, Juan Pérez-Ruiz, Julián Barquín, *Generation System Reliability Including Natural Gas System Constraints using Monte Carlo Methods*, 9th. Spanish-Portuguese Congress on Electrical Engineering , Marbella, Málaga, Spain, June 30 to July 2, 2005.

J. Barquín, *Equivalent Reduced Order Systems through Generalized Selective Modal Analysis*, IEEE Power Tech, St. Petersburg, Russia, June 27 to June 30, 2005.

J. Barquín, E. Centeno, J. Reneses, *Stochastic market equilibrium model for generation planning*, 8th Probabilistic Methods Applied to Power Systems Conference, Ames, Iowa, USA, September 12 to September 16, 2004.

J. Muñoz-Estrada, N. Jimenez-Redondo, J. Perez-Ruiz, J. Barquin, *Including Combined-Cycle Power Plants in Generation System Reliability Studies*, 8th Probabilistic Methods Applied to Power Systems Conference, Ames, Iowa, USA, September 12 to September 16, 2004.

J. Barquín, A. Garro, E. Fco. Sánchez-Úbeda, S. Tejero, *A new model for electricity price series modelling and forward and volatility curves computation*, 8th Probabilistic Methods Applied to Power Systems Conference, Ames, Iowa, USA, September 12 to September 16, 2004.

Fco. A. Campos, J. Villar, J. Barquin, *Application of Possibility Theory to Robust Cournot Equilibrium in Electricity Market*, 8th Probabilistic Methods Applied to Power Systems Conference, Ames, Iowa, USA, September 12 to September 16, 2004.

J. Barquín, B. Vitoriano, F. J. Santos, F. Fernández, J. González del Santo, J. M. Vicente Andrés, M. Urios Rodríguez, *Electricity competition and market splitting: a real-size two countries case*, 2nd International Conference on Liberalization and Modernization of Power Systems: Congestion Management Problems, Irkutsk, Russia, August 11 to August 14, 2003.

J. Barquin, M. Vazquez, *Cournot equilibrium computation on electricity networks*, 2nd International Conference on Liberalization and Modernization of Power Systems: Congestion Management Problems, Irkutsk, Russia, August 11 to August 14, 2003.

- J. Barquín, *On oligopolistic electricity market equilibria and contingent claims*, VIII Congreso Hispano-Luso de Ingeniería Eléctrica, Vilamoura, Portugal, July 3 to July 5, 2003.
- J. Muñoz, J. Barquín, N. Jiménez, J. Pérez, *Combined-cycle units modelling for power systems reliability studies*, VIII Congreso Hispano-Luso de Ingeniería Eléctrica, Vilamoura, Portugal, July 3 to July 5, 2003.
- J. García González, E. Parrilla, J. Barquín, J. Alonso, A. Sáiz Chicharro, A. González, *Under-relaxed Iterative Procedure for Feasible Short-Term Scheduling of a Hydro Chain.*, IEEE Power Tech, Bologna, Italy, June 23 to June 26, 2003.
- J. Barquín, E. Centeno, A. López-Nicolás, R. Quinteros, *Forecasting the Chilean short-term electricity market behavior under a new proposed regulation*, IEEE Power Tech, Bologna, Italy, June 23 to June 26, 2003.
- J. Muñoz, N. Jiménez, J. Pérez, J. Barquín, *Natural gas network modeling for power systems reliability studies*, IEEE Power Tech, Bologna, Italy, June 23 to June 26, 2003.
- J. Barquín, C. Batlle, *Fuel Prices Scenario Generation based on a Multivariate GARCH Model for Risk Analysis in a Wholesale Electricity Market*, 7th Probabilistic Methods Applied to Power Systems Conference, Naples, Italy, September 22 to September 26, 2002.
- J. Barquín, L. Rouco, H. R. Vargas, *Generalized selective modal analysis*, 2002 IEEE/PES Winter Meeting: Panel Session on Recent Applications of Linear Analysis, New York, New York, USA, to , 2001.
- J. Reneses, E. Centeno, J. Barquín, *Computation and decomposition of marginal costs for a GENCO in a constrained competitive Cournot equilibrium*, IEEE Power Tech, Porto, Portugal, September 10 to September 13, 2001.
- J. Barquín, M. Rivier, *Casación en sistemas multiárea: un algoritmo basado en programación lineal*, VII Jornadas Hispano-Lusas de Ingeniería Eléctrica, Leganes, Madrid, Spain, July 4 to July 6, 2001.
- J. García González, J. Barquín Gil, *La planificación de la explotación en un sistema eléctrico liberalizado*, VII Jornadas Hispano-Lusas de Ingeniería Eléctrica, Leganes, Madrid, Spain, July 4 to July 6, 2001.
- J. Barquín, J. Garcia-Gonzalez, J. Roman, *Water Value in Competitive Markets: Dynamic Programming and Game Theory*, 6th Probabilistic Methods Applied to Power Systems Conference, Madeira, Portugal, September 25 to September 28, 2000.
- J. Garcia-Gonzalez, J. Barquín, *Building supply functions under uncertainty for a day-ahead electricity market*, 6th Probabilistic Methods Applied to Power Systems Conference, Madeira, Portugal, September 25 to September 28, 2000.
- I. Otero-Novas, C. Batlle, J. J. Alba, C. Meseguer, J. Barquín, *A model based in numerical simulation techniques as a tool for decision-making and risk management in a wholesale electricity market. Part II: The market model*, 6th Probabilistic Methods Applied to Power Systems Conference, Madeira, Portugal, September 25 to September 28, 2000.
- C. Batlle, I. Otero-Novas, J. J. Alba, C. Meseguer, J. Barquín, *A model based in numerical simulation techniques as a tool for decision-making and risk management in a wholesale electricity market. Part I: General structure and scenario generators*, 6th Probabilistic Methods Applied to Power Systems Conference, Madeira, Portugal, September 25 to September 28, 2000.

- J.I. del Castillo, J. Barquín, *Oligopolistic Electrical Market Competition, Stranded Costs and Uncertainty: A Supply Function Approach*, 6th Probabilistic Methods Applied to Power Systems Conference, Madeira, Portugal, September 25 to September 28, 2000.
- I. Otero-Novas, J. Barquin, C. Batlle, C. Meseguer, J. J. Alba, *A model of strategic behavior for decision-making and risk management in a wholesale electricity market*, EPRI's 6th Biennial 2000 International Energy Pricing Conference, Washington DC, USA, July 16 to July 20, 2000.
- J. Garcia-Gonzalez, J. Barquin, *Self Unit Commitment of Thermal Units in a Competitive Electricity Market*, IEEE Summer Meeting 2000, Seattle, Washington, USA, July 16 to July 20, 2000.
- S. Galarza, J. Barquín, *A procedure for the computation of the spot price component associated to transient stability*, VI Jornadas Hispano-Lusas de Ingeniería Eléctrica, Lisbon, Portugal, July 7 to July 9, 1999.
- J. García, J. Román, J. Barquín, A. González, *Modelo de casación de ofertas para el mercado diario mediante programación lineal-entera*, VI Jornadas Hispano-Lusas de Ingeniería Eléctrica, Lisbon, Portugal, July 7 to July 9, 1999.
- E. Centeno, J. Barquín, E. Malillos, J. Román, *Gestión hidráulica a medio plazo en un entorno competitivo*, VI Jornadas Hispano-Lusas de Ingeniería Eléctrica, Lisbon, Portugal, July 7 to July 9, 1999.
- J. Barquin, E. Centeno, E. Malillos, *Medium-term hydro generation in a competitive electricity market*, IEEE Power Tech, Budapest, Hungary, August 28 to September 1, 1999.
- J. Barquin, *On voltage stability regions and voltage secondary control*, IEEE Power Tech, Budapest, Hungary, August 28 to September 1, 1999.
- J. Garcia, J. Roman, J. Barquin, A. Gonzalez, *Strategic bidding in deregulated power systems*, Power Systems Control Conference, Trondheim, Norway, June 28 to July 2, 1999.
- J. Barquin, D. Soler, O. Largo, G. Relano, J.I. de la Fuente, *On the Cost of the Reactive Power Generation and Voltage Support Service*, Bulk Power Systems Dynamics and Control, Santorini, Greece, August 24 to August 28, 1998.
- A. Elices, L. Rouco, J. Barquin, *Frequency and time domain analysis of grounding systems components*, 32nd Universities Power Engineering Conference, Manchester, United Kingdom, September 10 to September 12, 1997.
- J. L. Fernandez, A. Cortes, T. Abarca, J. L. Sancha, J. I. de la Fuente, T. Gomez, J. Barquin, *A multi-level automatic voltage control system*, Power Systems Control Conference, Dresde, Germany, to , 1996.
- J. L. Zamora, A García-Cerrada, J. Barquín, *Modelos de orden reducido para motores de inducción*, Seminario anual de automática y electrónica, Tarragona, Spain, September 20 to September 22, 1995.
- J. Barquin, T. Gomez, F. L. Pagola, *Hopf limit cycles estimation in power systems*, IEEE Power Tech'95, Estocolmo, Sweden, June 18 to June 22, 1995.
- J. Barquin, *Algunas técnicas para el cálculo del menor valor singular en matrices no necesariamente regulares*, Encuentro de análisis matricial y aplicaciones, Vitoria, Spain, September to , 1994.
- J. L. Fernandez, A. Cortes, J. Barquin, T. Gomez, *New algorithms for the computation of voltage collapse margins*, IEEE MELECON'94, Antalya, Turkey, April 12 to April 14, 1994.
- J. Barquín, F. L. Pagola, T. Gómez, *Determination of voltage collapse areas through generalized singular value analysis*, Bulk Power Systems Voltage Stability Phenomena, Davos, Switzerland, August 22 to August 26, 1994.

J. Barquín, T. Gómez, F. L. Pagola, *El colapso de tensiones y la bifurcación silla-nodo*, III Jornadas Hispano-Lusas de Ingeniería Eléctrica, Barcelona, Spain, July 1 to July 3, 1993.

Research Projects

Panama network expansion planning assesment. Financed by Interamerican Development Bank. From June, 2008 to September, 2008.

Central American Electricity Market Design. Financed by Indra. From January, 2008 to July, 2008.

Iberian market electricity auctions design. Financed by OMIP. From April, 2008 to May, 2008.

Assistance for strategic studies. Financed by Endesa. From January, 2008 to December, 2008.

Advising MIBEL Planification . Financed by Endesa. From January, 2008 to December, 2008.

MIBEL Assests Management. Financed by Endesa. From January, 2008 to December, 2008.

Access and Last Resource Tariffs Access Methodology. Financed by CNE. From January, 2008 to June, 2008.

Consultancy project for the optimal management of hydroelectric reservoirs using the model EXLA and reinforcement of the stochastic version. Financed by Endesa. From January, 2007 to December, 2007.

Analysis of the operation of the Spanish electricity market. Financed by Indra/Endesa. From January, 2007 to December, 2007.

MIBEL Management. Financed by Endesa. From January, 2007 to December, 2007.

HEPLASE-2007: MIBEL Planning. Financed by Endesa. From January, 2007 to December, 2007.

Assistance for estrategic studies. Financed by Endesa. From January, 2007 to December, 2007.

Coordinating energy security of supply actions. Financed by European Commission. From January, 2007 to December, 2008.

Diagnostic, design and implementation of market monitoring and surveillance mechanisms for the Guatemala's electricity market. Financed by Mercados Energéticos. From October, 2006 to March, 2007.

Study of opportunities on the evolutions of the French balancing mechanism. Financed by La SNET. From July, 2006 to September, 2006.

HEPLASE Asistance. Financed by Endesa. From January, 2006 to December, 2006.

Medium-term electricity generation planning models (HEPLASE 2006). Financed by Endesa. From January, 2006 to December, 2006.

Strategic Analysis of Endesa Generation Capacity Expansion. Financed by Endesa. From January, 2006 to December, 2006.

AGM-2006: Electricity markets management support. Financed by Endesa. From January, 2006 to December, 2006.

Central and Eastern European Energy Market (C3EM). Financed by Hungarian Regulator. From October, 2005 to April, 2006.

Endesa generation expansion analysis assistance. Financed by Endesa. From April, 2005 to December, 2005.

AGM-2005: Electricity markets management support. Financed by Endesa. From January, 2005 to December, 2005.

SESSA: Sustainable Energy Specific Support Assessment. Financed by European Commission (DG Research). From April, 2004 to October, 2005.

Regulatory framework harmonization for regional integration. Financed by OSINERG-GART (Perú). From June, 2004 to January, 2005.

AGM-2004: Electricity markets management support. Financed by Endesa. From January, 2004 to December, 2004.

VALORE tool adaption to a generic multi-area market. Phase 2. Financed by Endesa-Italia. From March, 2004 to December, 2004.

Hepulse 2004: peninsular electricity system planning tool. Financed by Endesa. From January, 2004 to December, 2004.

Peninsular electricity system planning study support. Financed by Endesa. From January, 2004 to December, 2004.

On-line course on electricity sector regulation. Financed by CEDDET. From October, 2003 to February, 2004.

ERIME 2003. Financed by Endesa. From December, 2003 to December, 2004.

Endesa generation expansion analysis tool enhancement. Financed by Endesa. From November, 2003 to June, 2004.

Evaluation of models for market power in electricity networks. Financed by French, Belgian and Dutch Regulators. From April, 2003 to November, 2003.

Long-term planification tool development. Financed by Endesa. From January, 2003 to December, 2003.

Spanish electricity system planning tool (Hepulse 2003). Financed by Endesa. From January, 2003 to December, 2003.

AGM: electricity markets management support. Financed by Endesa. From January, 2003 to December, 2003.

Energy markets risks study (ERIME). Financed by Endesa. From January, 2002 to December, 2003.

VALORE tool adaption to a generic multi-area market. Financed by Endesa-Italia. From June, 2003 to October, 2003.

Liberalized electricity systems capacity expansion. Financed by Endesa. From April, 2002 to December, 2002.

Spanish electricity system planning study support. Financed by Endesa. From January, 2002 to December, 2002.

Hydrothermal management in electricity markets model. Financed by Endesa. From January, 2002 to December, 2002.

Fiabilidad conjunta del suministro eléctrico y de gas.. Financed by Dirección general de proyectos de investigación. Ministerio de Ciencia y Tecnología.. From January, 2001 to January, 2003.

Spanish electricity system planning tools HEPLASE. Financed by Endesa. From January, 2001 to December, 2001.

Valuing electricity generation operational risks (VAROPE). Financed by Endesa. From January, 2001 to December, 2001.

Medium-term hydrothermal coordination (VALORE-2001). Financed by Endesa. From January, 2001 to December, 2001.

Long-term planification tool development. Financed by Endesa. From January, 2001 to December, 2001.

Short-term hydro management (EXHIDRO 2001). Financed by Endesa. From January, 2001 to December, 2001.

Chilean electricity market prices study and analysis. Financed by Enersis. From January, 2000 to May, 2000.

VALORE-2000: Medium-term hydro programming. Financed by Endesa. From January, 2000 to December, 2000.

EXHIDRO-2000: weekly hydrothermal management. Financed by Endesa. From January, 2000 to December, 2000.

Daily market bids analysis (MERCATOR-2000). Financed by Endesa. From January, 2000 to December, 2000.

Planification, regulation and risk management simulation tools: developments and improvements. Financed by Endesa. From January, 2000 to December, 2000.

Operational Procedure PO74 (Voltage Control) Critical Analysis. Financed by UNESA. From November, 2000 to December, 2000.

Gielda Power Exchange (Poland) market clearing algorithm development. Financed by SEMA Group. From April, 2000 to July, 2000.

Planification, regulation and risk management simulation tools. Financed by Endesa. From January, 1999 to December, 1999.

EXCOM/VALORE 99: bidding tool in a competitive framework. Financed by Endesa. From January, 1999 to December, 1999.

Study of the coupling coil for a medium voltage distribution network communication system. Financed by Abengoa. From January, 1998 to March, 1998.

EXCOM/VALORE: bidding tool in a competitive framework. Financed by Endesa. From January, 1998 to December, 1998.

Electrical interconnections environmental impact. Financed by Red Eléctrica de España. From March, 1995 to April, 1995.

Voltage control and reactive power management services payments. Financed by Red Eléctrica de España. From March, 1996 to June, 1996.

EXMEN-II (Weekly operation tool). Financed by Endesa. From November, 1996 to March, 1997.

Voltage secondary control. Financed by Red Eléctrica de España. From June, 1995 to March, 1996.

Voltage instability: security criteria. Financed by Red Eléctrica de España. From January, 1990 to January, 1992.

Algorithms for distance relaying. Financed by Electric Power Research Institute. From March, 1989 to December, 1989.

Optimal load flows. Financed by Red Eléctrica de España. From September, 1988 to February, 1989.