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Résumé / Curriculum Vitae

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Andrés Ramos
 Professor
 Instituto de Investigación Tecnológica
 Departamento de Organización Industrial
 Escuela Técnica Superior de Ingeniería (ICAI)
 Universidad Pontificia Comillas

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Enlaces rápidos

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[Universidad Pontificia Comillas](#)
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Academic background

Ph.D. (1990) Universidad Politécnica de Madrid in Madrid, Spain

 A. Ramos [Modelos de explotación a medio plazo de la generación eléctrica. Aplicaciones para el sistema español](#) Doctoral Tesis. Universidad Politécnica de Madrid, Spain. November 1990 ([Resumen](#)). Director: Ignacio Pérez-Arriaga (VIESGO Award 1990 to the doctoral thesis, awarded by the Fundación CEOE and sponsored by Electra de Viesgo S.A.)

Industrial Engineer major in Power Systems (1982), ICAI School of Engineering, Universidad Pontificia Comillas in Madrid, Spain

A. Ramos [Incidencia de las centrales solares en la fiabilidad y coste de explotación de un sistema eléctrico](#) Final Year Project ETS de Ingeniería. Universidad Pontificia Comillas, Spain. Junio 1982


Postdoctoral sabbatical stay

Visiting scholar at the [Department of Energy Technology, Aalborg University](#), Denmark. Topic: Electricity Market and Power System Optimization. February 2017, 2018, 2019, and 2021.

Visiting scholar at the [Massachusetts Institute of Technology Energy Initiative](#), Cambridge, MA, USA. Topic: Decision Support Models for Low-Carbon Electric Power Systems. November 2010. Januaries since 2010 up to 2015. March and May 2016. Januaries since 2017 up to 2021.

Formación académica

Doctor por la Universidad Politécnica de Madrid, España. 1990

 A. Ramos [Modelos de explotación a medio plazo de la generación eléctrica. Aplicaciones para el sistema español](#) Tesis Doctoral. Universidad Politécnica de Madrid, España. Noviembre 1990 ([Resumen](#)). Director: Ignacio Pérez-Arriaga (Premio VIESGO 1990 a la tesis doctoral, concedido por la Fundación CEOE y patrocinado por Electra de Viesgo S.A.)

Ingeniero Industrial especialidad Electricidad por la Escuela Técnica Superior de Ingeniería (ICAI), Universidad Pontificia Comillas, España. 1982

A. Ramos [Incidencia de las centrales solares en la fiabilidad y coste de explotación de un sistema eléctrico](#) Proyecto fin de carrera. ETS de Ingeniería. Universidad Pontificia Comillas, España. Junio 1982

Estancia postdoctoral

Profesor visitante en el [Department of Energy Technology, Aalborg University](#), Dinamarca. Tema: Electricity Market and Power System Optimization. Febrero 2017, 2018, 2019 y 2021.

Profesor visitante en el [Massachusetts Institute of Technology Energy Initiative](#), Cambridge, MA, EEUU. Tema: Modelos de apoyo a la toma de decisiones en sistemas de energía eléctrica

Visiting scholar at the [Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology](#), Cambridge, MA, USA. Topic: Integrated medium term operation planning. July-August 2009.

Visiting scholar at the [Department of Management Science and Engineering, Stanford University](#), Palo Alto, CA, USA (former Department of Operations Research). Topic: Planning under uncertainty and parallel processing. Academic year 1991-92.

Academic positions

Head of the [Institute for Research in Technology](#) of the ICAI School of Engineering since September 2020.

Director of the MBA in the Global Energy Industry of the Universidad Pontificia Comillas, jointly organized with the University of Strathclyde since May 2015 up to September 2020.

Coordinator of the [Energy Systems Modeling Research Group](#) of IIT since April 2009 up to September 2020.

Member of the University Research Commission since February 2000 up to July 2020.

Head of the Department of Industrial Organization of the ICAI School of Engineering since June 1999 up to May 2008.

Head of the [Institute for Research in Technology](#) of the ICAI School of Engineering since May 1998 up to April 1999.

Deputy Head of the [Institute for Research in Technology](#) of the ICAI School of Engineering since October 1997 up to April 1998.

Teaching experience

Since 2001 master courses on [Decision Support Models in the Electric Power Industry](#) in the [Official Master's Degree in the Electric Power Industry \(MEPI\)](#).

Since 1992 doctoral courses on [Optimization Techniques](#), [Deterministic](#) and [Stochastic Optimization](#).

Since 1997 several courses on Operations Research, Mathematical Methods and Models for industrial engineering undergraduate students.

Sorting and Searching Algorithms for computer engineering undergraduate students in 1996-98.

Research interests

Development of new algorithms and computer implementation, modeling of complex systems. Mathematical techniques of operations research and their application to large-scale problems.

Large-scale optimization techniques. Stochastic optimization. Benders' decomposition.

Planning and operation of electric energy systems -models for generation and transmission network planning, generation operation models-. Economy of the electric sector. Integration of renewable energy sources. Off-shore wind generation. Electric vehicles.

Computational techniques and analytical methods for planning, operations, and control. Economics, market organization, cost structures, pricing, and risk management. Reliability, uncertainty, and probability and stochastic system applications. Emerging methods for restructured systems. Industry restructuring planning and policy issues.

Research projects and contracts

Coordinator of a Thematic Network on Optimization under Uncertainty composed by 13 universities and 43 researchers. Ministry of Education and Science. MTM2004-21648-E and MTM2006-26619-E.

Since 1982 I have participated in many research contracts for electric companies, mainly Spanish (Endesa, Unión Fenosa, REE, Iberdrola), but also European and South American. Also I have done research for the National Energy Commission (CNE) and other government agencies. Currently, I am involved in research contracts in these topics:

- Evaluation of Electric Vehicle Penetration and their Impact on the Introduction of Intermittent

bajos en carbono. Noviembre 2010. Eros de 2010 a 2015. Marzo y Mayo 2016. Eros de 2017 a 2021.

Profesor visitante en el [Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology](#), Cambridge, MA, EEUU. Tema: Planificación integral de la operación a medio plazo. Julio-Agosto 2009.

Profesor visitante en el [Department of Management Science and Engineering de Stanford University](#), Palo Alto, CA, EEUU (anteriormente Department of Operations Research). Tema: Planificación bajo incertidumbre y procesamiento paralelo. Curso 1991-92.

Puestos académicos

Director del [Instituto de Investigación Tecnológica](#) de la Escuela Técnica Superior de Ingeniería (ICAI) desde septiembre 2020.

Director del MBA in the Global Energy Industry de la Universidad Pontificia Comillas, organizado conjuntamente con la University of Strathclyde desde mayo 2015 hasta septiembre 2020.

Coordinador del [Área de Modelado de Sistemas de Energía \(SADSE\)](#) del IIT desde abril 2009 hasta septiembre 2020..

Miembro de la Comisión de Investigación de la Universidad desde febrero 2000 hasta julio 2020.

Directora del Departamento de Organización Industrial de la Escuela Técnica Superior de Ingeniería (ICAI) desde junio 1999 hasta mayo 2008.

Director del [Instituto de Investigación Tecnológica](#) de la Escuela Técnica Superior de Ingeniería (ICAI) desde mayo 1998 a abril 1999.

Subdirector del [Instituto de Investigación Tecnológica](#) de la Escuela Técnica Superior de Ingeniería (ICAI) desde octubre 1997 a abril 1998.

Experiencia docente

Desde 2001 cursos de máster en [Modelos de ayuda a la decisión en el sector eléctrico](#) en el [Official Master's Degree in the Electric Power Industry \(MEPI\)](#).

Cursos de doctorado sobre [Técnicas de Optimización](#), [Optimización Determinista](#) y [Estocástica](#) desde 1992.

Cursos de Investigación Operativa, Métodos y Modelos Matemáticos para estudiantes de grado de Ingeniería Industrial desde 1997.

Algoritmos de Ordenación y Búsqueda para estudiantes de grado de Ingeniería Informática en 1996-98

Líneas de investigación

Desarrollo de nuevos algoritmos e implantación informática, modelado de sistemas complejos. Técnicas matemáticas de investigación operativa y su aplicación a problemas de gran tamaño.

Técnicas de Optimización de gran escala. Optimización estocástica. Descomposición de Benders.

Planificación y operación de sistemas de energía eléctrica -modelos de planificación de la generación y del transporte, modelos de operación de la generación-. Economía del sector eléctrico. Integración de energías renovables. Generación eólica marina. Vehículos eléctricos.

Técnicas de cálculo y métodos analíticos para planificación, operación y control. Economía, organización de mercados, estructura de costes, determinación de precios y gestión de riesgos. Fiabilidad, incertidumbre, probabilidad y aplicaciones para sistemas estocásticos. Métodos emergentes para sistemas en reestructuración. Planificación de la reestructuración

Renewable Energy in Electric System Operation (for Iberdrola Renovables in [CENIT-VERDE](#), MERGE and [TWENTIES](#))

- [Forecasting and optimization of wind generation in energy markets](#). Ministry of Economy and Competitiveness. MTM2013-48462-C2-2-R
- Large-scale transmission expansion planning in European projects as [Beyond2020](#), [Desertec](#), [MedGrid](#), [RESCost](#), [e-Highway2050](#), [KSA-MIT](#), [SET-Nav](#) and [openENTRANCE](#).

Besides, I have participated in research contracts of eco-driving in railway transportation and parking place assignment.

A detailed list of all the research projects and contracts can be seen at [this web page](#).

Professional activities

Associate Editor of [Computational Management Science](#) from Springer.

Referee of international journals (Operations Research, Annals of Operations Research, Energy Systems, European Journal of Operational Research, Computational Management Science, International Journal of Electrical Power and Energy Systems, European Transactions on Electrical Power, Revista de Ingeniería Eléctrica del IEEE América Latina, IEEE Transactions on Power Systems, IEEE Transactions on Sustainable Energy, IEEE Transactions on Smart Grid, IET Generation, Transmission & Distribution, Wind Energy, International Journal of Energy Research, International Journal of Production Economics) and international conferences (IEEE PowerTech, PSCC, PMAPS, EuroPES, IASTED International Conference on Power and Energy Systems, ORP3, ICRERA).

Referee of the National Agency for Research Projects Evaluation (ANEP) and of the Castilla y León Agency for Research Projects Evaluation (ACSUCYL). Referee of the Netherlands Science Foundations NWO and STW. Referee of the Austrian Science Fund FWF. Referee of the Research Council of Norway RCN.

Member of the Asociación de Ingenieros de ICAI.

Co-organizer of *Applied Mathematical Programming and Modelling* Conference (APMOD 2006). Ministry of Education and Science. MTM2005-25591-E

Co-organizer of [7th International Conference on the European Energy Market](#) (EEM 10).

de un sistema y temas regulatorios.

Proyectos y contratos de investigación

Coordinador de una Red Temática de Optimización bajo Incertidumbre compuesta por 13 universidades y 43 investigadores. Ministerio de Educación y Ciencia. MTM2004-21648-E y MTM2006-26619-E.

Desde 1982 he participado en numerosos contratos de investigación para las compañías eléctricas, principalmente españolas (Endesa, Unión Fenosa, REE, Iberdrola), pero también europeas y sudamericanas. También he realizado investigación para la Comisión Nacional de Energía (CNE) y otras instituciones gubernamentales. Actualmente, estoy involucrado en estos temas:

- Evaluación de la penetración de vehículos eléctricos y su impacto en la introducción de energía intermitente renovable en la operación del sistema eléctrico (para Iberdrola Renovables en el [CENIT-VERDE](#), MERGE y [TWENTIES](#))
- [Previsión y optimización de la generación eólica en los mercados de energía](#). Ministerio de Economía y Competitividad. MTM2013-48462-C2-2-R
- Planificación de la expansión de la red a gran escala en proyectos europeos como [Beyond2020](#), [Desertec](#), [MedGrid](#), [RESCost](#), [e-Highway2050](#), [KSA-MIT](#), [SET-Nav](#) y [openENTRANCE](#).

Además, he participado en proyectos de investigación de conducción económica en ferrocarril y asignación de plazas de aparcamiento.

Se puede ver una lista detallada de todos los proyectos y contratos de investigación en [esta página web](#).

Actividades profesionales

Editor Asociado de [Computational Management Science](#) de Springer.

Revisor de revistas internacionales (Operations Research, Annals of Operations Research, Energy Systems, European Journal of Operational Research, Computational Management Science, International Journal of Electrical Power and Energy Systems, European Transactions on Electrical Power, Revista de Ingeniería Eléctrica del IEEE América Latina, IEEE Transactions on Power Systems, IEEE Transactions on Sustainable Energy, IEEE Transactions on Smart Grid, IET Generation, Transmission & Distribution, Wind Energy, International Journal of Energy Research, International Journal of Production Economics, Energies) y de conferencias internacionales (IEEE PowerTech, PSCC, PMAPS, EuroPES, IASTED International Conference on Power and Energy Systems, ORP3, ICRERA).


Evaluador de la Agencia Nacional de Evaluación y Prospectiva (ANEP) y de la Agencia para la Calidad del Sistema Universitario de Castilla y León (ACSUCYL). Evaluador de las Netherlands Science Foundations NWO and STW. Evaluador de la Austrian Science Fund FWF. Evaluador de la Research Council of Norway RCN.

Miembro de la Asociación de Ingenieros de ICAI.













Co-organizador del congreso *Applied Mathematical Programming and Modelling* (APMOD 2006). Ministerio de Educación y Ciencia. MTM2005-25591-E

Co-organizador del congreso [7th International Conference on the European Energy Market](#) (EEM 10).

PhD Thesis / Tesis Doctorales

 Rafael Espejo [A Complex-Network Approach to Support Transmission Expansion Planning](#). PhD Thesis. Universidad Pontificia Comillas. October 2019. ([Summary](#)). Directors: Andrés Ramos, Sara Lumbreras.

 Quentin Ploussard [Efficient reduction techniques for a large-scale Transmission Expansion Planning problem](#). PhD Thesis. Universidad Pontificia Comillas. May 2019. ([Summary](#)). Directors: Luis Olmos, Andrés Ramos.

-  Germán Morales-España [Unit commitment: computational performance, system representation and wind uncertainty management](#). PhD Thesis. Universidad Pontificia Comillas. October 2014 ([Summary](#)). Directors: Andrés Ramos, Javier García-González
-  Sara Lumbreras [Decision Support Methods for Large-Scale Flexible Transmission Expansion Planning](#) PhD Thesis. Universidad Pontificia Comillas. June 2014 ([Summary](#)). Director: Andrés Ramos
- Santiago López de Haro [Batch Sequencing for Resource Management in Manufacturing Environments](#). PhD Thesis. Universidad Pontificia Comillas. February 2011 ([Summary](#)). Directors: Pedro Sánchez, Andrés Ramos
- Jesús María Latorre [Resolución distribuida de problemas de Optimización estocástica. Aplicación al problema de coordinación hidrotérmica](#) (*Distributed resolution of stochastic optimization problems. Application to the hydrothermal coordination problem*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Noviembre 2007 ([Resumen](#)). Directores: Andrés Ramos, Rafael Palacios ISBN 9788469128022
-  Emilio Gómez-Villalva [Gestión energética óptima a medio plazo de un consumidor industrial de energía térmica y eléctrica en mercados liberalizados](#) (*Medium term optimal energy management of a steam and electricity industrial consumer in liberalized markets*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Julio 2004 ([Resumen](#)). Director: Andrés Ramos
- Santiago Cerisola [Descomposición de Benders para problemas enteros mixtos. Aplicación a un modelo de coordinación hidrotérmica de medio plazo](#) (*Benders' decomposition for mixed integer problems. Application to a medium term hydrothermal coordination problem*) PhD Thesis. Universidad Pontificia Comillas. April 2004 ([Resumen](#)). Director: Andrés Ramos
- Mariano Ventosa [Modelado de la explotación de la generación en mercados eléctricos liberalizados mediante el problema complementario](#) (*Modeling the generation operation in liberalized electric markets by the complementarity problem*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Enero 2001 ([Resumen](#)). Directores: Andrés Ramos, Michel Rivier
- Juan Carlos Enamorado [Explotación óptima descentralizada de subsistemas hidrotérmicos interconectados](#) (*Decentralized optimal operation of interconnected hydrothermal subsystems*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Abril 2000 ([Resumen](#)). Directores: Tomás Gómez, Andrés Ramos
-  Pedro Sánchez [Mejoras en la eficiencia computacional de modelos probabilistas de explotación generación/red a medio plazo](#) (*Improvements in the computational efficiency of medium term probabilistic bulk operation models*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Diciembre 1998 ([Resumen](#)). Directores: Andrés Ramos, Ángel Sáiz Chicharro
- Efraim Centeno [Modelo de simulación de la explotación óptima anual de un sistema eléctrico](#) (*Simulation model for the yearly optimal operation of an electric system*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Septiembre 1998 ([Resumen](#)). Directores: Fernando de Cuadra, Andrés Ramos
-  Lucía Muñoz [Introducción de aspectos medioambientales en la planificación y operación de sistemas eléctricos](#) (*Introduction of environmental aspects in the operation and planning of electric systems*, manuscript in Spanish) Tesis doctoral. Universidad Pontificia Comillas. Junio 1998 ([Resumen](#)). Director: Andrés Ramos
- Master Thesis / Tesis de Máster**
- Carlos Escribano [Analyzing the impact of spot and reserve price uncertainty in optimization models for combined cycle gas turbines considering fatigue](#) Master Thesis. Universidad Pontificia Comillas. August 2020. Supervisor: Sonja Wogrin, Andrés Ramos
- Guillermo Quintero [Transition of the transmission network to a 100 % renewable European system](#) Master Thesis. Universidad Pontificia Comillas. August 2020. Supervisor: Andrés Ramos
-  Guillermo Huerta [Analysis and Prediction of the Negative Prices on the German Spot Power Market](#) Master Thesis. Universidad Pontificia Comillas. June 2018. Supervisors: Rubén Matey, Andrés Ramos
-  Manuel Buitron [Operación del Sistema Eléctrico Peninsular Español en 2040](#) Master Thesis. Universidad Pontificia Comillas. June 2018. Supervisors: Rafael Espejo, Andrés Ramos
-  Luis Cuadrado [Analysis of Power-Network Parameters for Data Validation](#) Master Thesis. Universidad Pontificia Comillas. June 2018. Supervisors: Rafael Espejo, Andrés Ramos
- Fernando Serrano [Data Analysis to Improve a Transmission Expansion Planning \(TEP\) Model](#) Master Thesis. Universidad Pontificia Comillas. June 2017. Supervisor: Andrés Ramos
- Pablo Omeñaca [Analysis of the Operation Reserves in a Hydrothermal System with High Share of Renewable Generation](#) Master Thesis. Universidad Pontificia Comillas. June 2017. Supervisor: Andrés Ramos
-  Rafael Espejo [Generation of random electricity transmission networks](#) Master Thesis. Universidad Pontificia Comillas. May 2016. Supervisors: Sara Lumbreras, Andrés Ramos
-  Chigoziri C. Egeruoh [Long-Term Transmission Expansion Planning for Nigerian Deregulated Power System. A systems approach](#) Master Thesis. Universidad Pontificia Comillas. July 2012. Supervisors: Andrés Ramos, Juan José Sánchez
- Sara Lumbreras [Optimal design of the electrical layout of an offshore wind farm applying decomposition strategies](#) Master Thesis. Universidad Pontificia Comillas. March 2012. Supervisor: Andrés Ramos
- Isabel Brage [A bidding strategy to reduce imbalance costs for wind generators](#) Master Thesis. Universidad Pontificia Comillas. October 2011. Supervisor: Andrés Ramos
-  Jesús D. Crisóstomo [Generation Costs Estimation in the Spanish Mainland Power System from 2011 to 2020](#) Tesis de máster. Universidad Pontificia Comillas. Febrero 2011. Directores: Andrés Ramos, Jesús María Latorre
-  Álvaro Urbasos [Optimización y gestión del riesgo del aprovisionamiento de carbón de centrales termoeléctricas](#) Tesis de máster. Universidad Pontificia Comillas. Febrero 2011. Directores: Andrés Ramos, Jesús María Latorre

María Teresa Peña *Train Timetabling Problem for Complex Railway Systems* Master Thesis. Universidad Pontificia Comillas. July 2010. Supervisors: Antonio Fernández, Andrés Ramos

Breno H. Wottrich *Generation costs evaluation in centralized systems. A contrast over market mechanisms* Master Thesis. Universidad Pontificia Comillas. July 2010. Supervisors: Rafael Bellido, Andrés Ramos, Jesús María Latorre

Borja Jover *El mercado de carbón internacional y su influencia en el sector eléctrico* Tesis de máster. Universidad Pontificia Comillas. Julio 2010. Directores: Andrés Ramos, Jorge Palomares

Marcos Banzo *Stochastic Optimization Model for Electric Power System Planning of Offshore Wind Farms* Master Thesis. Universidad Pontificia Comillas. March 2010. Supervisor: Andrés Ramos

Denny J. Pérez de los Santos *Análisis y propuesta de mejoras a la regulación de la actividad de transporte de energía eléctrica y, definición y desarrollo de un modelo para el reparto de los cargos complementarios de red en la República Dominicana* Tesis de máster. Universidad Pontificia Comillas. Marzo 2008. Director: Andrés Ramos

Alessandro Zani *A statistical model for the electricity Spanish market* Master Thesis. Universidad Pontificia Comillas. September 2008. Supervisors: José Joaquín Sellán, Andrés Ramos

Julio Díaz Cohén *ExpandRD: Modelo de Planificación de Expansión de Largo Plazo Generación/Red para República Dominicana* Tesis de máster. Universidad Pontificia Comillas. Marzo 2008. Directores: Mauricio Caamaño, Andrés Ramos

Publications: Journal papers / Publicaciones: artículos en revistas

If you are interested in having a personal copy of some paper please send me an email / Si estás interesado en tener una copia de algún artículo para uso personal envíame un mensaje de correo electrónico.

J.A. Pérez-Rúa, S. Lumbrellas, A. Ramos, and N.A. Cutululis *Reliability-based Topology Optimization for Offshore Wind Farm Collection System*. Wind Energy, 2021 [10.1002/we.2660](https://doi.org/10.1002/we.2660)

A. Ramos, F.A. Campos, A. Sánchez, C. Mateo, F. de Cuadra, P. Linares *Instituto de Investigación Tecnológica (IIT), Universidad Pontificia Comillas - ICAI. Modelos para el sector eléctrico y el sector energético*. Papeles de Energía 12, 69-90, Febrero 2021.

G. Micheli, M.T. Vespucci, M. Stabli, C. Puglisi, A. Ramos *A two-stage stochastic MILP model for generation and transmission expansion planning with high shares of renewables* Energy Systems October 2020 [10.1007/s12667-020-00404-w](https://doi.org/10.1007/s12667-020-00404-w)

A.K. Yazdi, M.A. Kaviani, Th. Hanne and A. Ramos *A binary differential evolution algorithm for airline revenue management: a case study* Soft Computing 24, 14221-14234, Sep 2020 [10.1007/s00500-020-04790-2](https://doi.org/10.1007/s00500-020-04790-2)

R. Espejo, G. Mestre, F. Postigo, S. Lumbrellas, A. Ramos, T. Huang and E. Bompard *Exploiting graphlet decomposition to explain the structure of complex networks: the GHuST framework* Scientific Reports 10, Jul 2020 [10.1038/s41598-020-69795-1](https://doi.org/10.1038/s41598-020-69795-1)

D.A. Tejada-Arango, S. Lumbrellas, P. Sánchez-Martín, and A. Ramos *Which Unit-Commitment Formulation is Best? A Systematic Comparison* IEEE Transactions on Power Systems 35 (4): 2926-2936 Jul 2020 [10.1109/TPWRS.2019.2962024](https://doi.org/10.1109/TPWRS.2019.2962024)

P. Crespo del Granado, G. Resch, F. Holz, M. Welisch, J. Geipel, M. Hartner, S. Forthuber, F. Sensfuss, L. Olmos, Ch. Bernath, S. Lumbrellas, L. Kranzl, A. Müller, S. Heitel, A. Herbst, Ch. Wilson, A. Ramos *Energy Transition Pathways to a low-carbon Europe in 2050: the degree of cooperation and the level of decentralization* Economics of Energy and Environmental Policy 9 (1): 121-135 March 2020 [10.5547/2160-5890.9.1.pcre](https://doi.org/10.5547/2160-5890.9.1.pcre)

Q. Ploussard, L. Olmos and A. Ramos *A search space reduction method for transmission expansion planning using an iterative refinement of the DC Load Flow model* IEEE Transactions on Power Systems 35 (1): 152-162, Jan 2020 [10.1109/TPWRS.2019.2930719](https://doi.org/10.1109/TPWRS.2019.2930719)

Th. Marge, S. Lumbrellas, A. Ramos, and B.F. Hobbs *Integrated offshore wind farm design: Optimizing micro-siting and cable layout simultaneously* Wind Energy 22, 1684-1698 November 2019 [10.1002/we.2396](https://doi.org/10.1002/we.2396)

R. Espejo, S. Lumbrellas, A. Ramos *A Complex-Network Approach to the Generation of Synthetic Power Transmission Networks* IEEE Systems Journal 13(3), 3050-3058, Sep 2019 [10.1109/JSYST.2018.2865104](https://doi.org/10.1109/JSYST.2018.2865104)

R. Espejo, S. Lumbrellas, A. Ramos *Analysis of transmission-power-grid topology and scalability, the European case study*. Physica A: Statistical Mechanics and its Applications 509, 383-395, Nov 2018 [10.1016/j.physa.2018.06.019](https://doi.org/10.1016/j.physa.2018.06.019)

Q. Ploussard, L. Olmos and A. Ramos *An efficient network reduction method for transmission expansion planning using multicut problem and Kron reduction* IEEE Transactions on Power Systems 33 (6): 6120-6130, Nov 2018 [10.1109/TPWRS.2018.2842301](https://doi.org/10.1109/TPWRS.2018.2842301)

J.G. Dedecca, S. Lumbrellas, A. Ramos, R.A. Hakvoort, P.M. Herder *Expansion Planning of the North Sea Offshore Grid: Simulation of Integrated Governance Constraints* Energy Economics 72, 376-392, May 2018 [10.1016/j.eneco.2018.04.037](https://doi.org/10.1016/j.eneco.2018.04.037)

A. Held, M. Ragwitz, F. Sensfuss, G. Resch, L. Olmos, A. Ramos, M. Rivier *How can the renewables targets be reached cost effectively? Policy options for the development of renewables and electricity networks* Energy Policy 116, 112-126, May 2018 [10.1016/j.enpol.2018.01.025](https://doi.org/10.1016/j.enpol.2018.01.025)

P. Duenas, A. Ramos, K. Tapia-Ahumada, L. Olmos, M. Rivier, J.I. Pérez-Arriaga *Security of supply in a carbon-free electric power system: The case of Iceland* Applied Energy 212, 443-454, Feb 2018

[10.1016/j.apenergy.2017.12.028](https://doi.org/10.1016/j.apenergy.2017.12.028)

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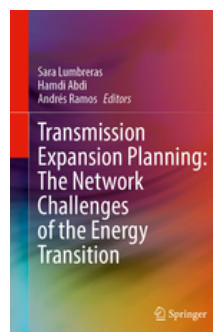
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