Felipe Feijoo, Ph.D.

Email : felipe.feijoo@pucv.cl
Mobile : +56-9-404-23304

http://eii.pucv.cl/

Education

- **Doctor of Philosophy, Industrial Engineering** — Tampa, FL
  University of South Florida — *August. 2010 – May. 2015*
- **Postdoctoral Research Fellow** — Zagreb, Croatia
  University of Zagreb — *December 2020. – December 2021*
- **Postdoctoral Research Fellow** — Baltimore-Cambridge, USA
  Johns Hopkins University - Massachusetts Institute of Technology — *May. 2015 – August. 2016*
- **Postdoctoral Research Associate** — Washington DC
  Pacific Northwest National Laboratory's Joint Global Change Research Institute — *August. 2016 – August. 2017*
- **Industrial Engineering, Engineering Sciences, Computer Science** — Temuco, Chile
  Universidad de La Frontera — *March. 2006 – May. 2010*

Professional and Academic Appointments

Current Appointments

- **School of Industrial Engineering, Pontificia Universidad Católica de Valparaíso** — Valparaíso, Chile
  Associate Professor — *2017 – Present*
- **Scientific Committee on Climate Change, Ministry of Environment of Chile** — Santiago, Chile
  Advisor — *2026 – Present*
- **Intergovernmental Panel on Climate Change (IPCC)** — Remote / International
  Lead Author, Working Group III - Chapter Energy Systems — *2025 – Present*
- **Asia-Pacific Economic Cooperation (APEC) – Ministry of Energy of Chile** — Santiago, Chile
  Consultant — *2025 – 2026*

Professional and consulting Appointments (relevant past)

- **King Abdullah Petroleum Studies and Research Center** — Riadh, Saudi Arabia
  Visiting Consultant — *August 2016 -August 2017*
- **Pacific Northwest National LAboratory, US Department of Energy** — Washington DC, US
  Scientist — *2016 - 2017*
- **International Institute for Applied Systems Analysis** — Vienna, Austria
  Visiting scholar — *2019*

Publications

Web of Science Peer Reviewed Journals (selected relevant articles - see full list in WoS portal or Google Scholar)

1. ***Tradeoffs between economy wide future net zero and net negative economy systems: The case of Chile.*** Felipe Feijoo, Abhishake Kundu, Antun Pfeifer, Luka Herc, Ana Prieto, Neven Duic. Renewable and Sustainable Energy Reviews, 207, 2025.
2. ***A stochastic Stackelberg problem with long-term investment decisions in Power-To-X technologies for multi-energy microgrids.*** Yolanda Matamala, Tapas K. Das, Felipe Feijoo. Energy, 213, 134131, 2025.
3. ***Multi-scale energy planning for the global transition: Local, regional, and global insights.*** Felipe Feijoo, Mateo Prina, Marko Mimica, Neven Duic. e-Prime-Advances in Electrical Engineering, Electronics and Energy, 100841, 2024.

4. ***Evaluating the Impact of Flexibilities from Heating and Electromobility in Chile's Carbon Neutrality Pathway.*** Abhishake Kundu, Francisco Flores, Carlos Fernandez, Humberto Godoy, Silvain Quoilin, Monica Castañeda, Felipe Feijoo. Buildings, 15, 1, 2024.
5. ***Photovoltaic sizing assessment for microgrid communities under load shifting constraints and endogenous electricity prices: A Stackelberg approach.*** Felipe Feijoo, Abhishake Kundu, Francisco Flores, Yolanda Matamala. 307, Energy, 2024.
6. ***Capturing features of hourly-resolution energy models in an integrated assessment model: An application to the EU27 region.*** Gonzalo Parrado-Hernando, Luka Herc, Felipe Feijoo, Iñigo Capellán-Pérez. 304, Energy, 2024.
7. ***The management of an energy system in the realm of rapid energy transition and degasification as a consequence of energy crisis, examination in H2RES energy model.*** Luka Herc, Felipe Feijoo, Ana Kodba, Hrvoje Dorotić, Goran Stunjek, Doris Beljan, Tomislav Pukšec, Goran Krajačić, Antun Pfeifer, Neven Duić. 315, Energy Conversion and Management, 2024.
8. ***Assessment of the impacts of renewable energy variability in long-term decarbonization strategies.*** Francisco Flores, Felipe Feijoo, Paelina DeStephano, Luka Herc, Antun Pfeifer, Neven Duić. 368, Applied Energy, 2024.
9. ***Optimal decarbonisation pathways for the Italian energy system: Modelling a long-term energy transition to achieve zero emission by 2050.*** Lorenzo Mario Pastore, Daniele Groppi, Felipe Feijoo, Gianluigi Lo Basso, Davide Astiaso Garcia, Livio de Santoli. 367, Applied Energy, 2024.
10. ***District Heating Deployment and Energy-Saving Measures to Decarbonise the Building Stock in 100% Renewable Energy Systems.*** Lorenzo Mario Pastore, Daniele Groppi, Felipe Feijoo. 14-8, Buildings, 2024.
11. ***Electricity sector impacts of water taxation for natural gas supply under high renewable generation.*** Andrea Arriet, Timothy I Matis, Felipe Feijoo. 294, Energy, 2024.
12. ***The impact of electromobility in public transport: An estimation of energy consumption using disaggregated data in Santiago, Chile.*** Franco Basso, Felipe Feijoo, Raúl Pezoa, Mauricio Varas, Brian Vidal. 286, Energy, 2024.
13. ***Fast energy transition as a best strategy for all? The nash equilibrium of long-term energy planning strategies in coupled power markets.*** Antun Pfeifer, Felipe Feijoo, Neven Duic. Accepted, Energy, 2023.
14. ***Assessing the impacts of economy-wide emissions policies in the water, energy, and land systems considering water scarcity scenarios.*** F. Licandeo, F Flores, F Feijoo. Applied Energy 342, 121115, 2023.
15. ***Water taxation strategies for the natural gas sector in North America: Facing a rising water crisis.*** A Arriet, TI Matis, F Feijoo Energy, 127994, 2023.
16. ***Probabilistic feasibility assessment of sequestration reliance for climate targets.*** Y Matamala, F Flores, A Arriet, Z Khan, F Feijoo. Energy, 127160, 2023.
17. ***Chilean pathways for mid-century carbon neutrality under high renewable potential.*** Andrea Arriet, Francisco Flores, Yolanda Matamala, Felipe Feijoo, Journal of Cleaner Energy Production, 379, 134483, 2022.
18. ***A Long-term Capacity Investment and Operational Energy Planning model with Power-to-X and flexibility technologies.*** Felipe Feijoo, Antun Pfifer, Luka Herc, Daniele Groppi, Neven Duic. Renewable and Sustainable Energy Reviews, 167, 112781, 2022.
19. ***A multinational carbon-credit market integrating distinct national carbon allowance strategies.*** Miguel Anjos, Felipe Fejoo, Sriram Sankaranarayanan. Applied Energy 319, 119181, 2022.
20. ***Impact of district heating and cooling on the potential for the integration of variable renewable energy sources in mild and Mediterranean climates.*** Tomislav Novosel, Felipe Feijoo, Neven Duic, J Domac. Energy Conversion and Management, 272, 116374, 2022.

21. ***Routing and charging facility location for EVs under nodal pricing of electricity: A bilevel model solved using special ordered set.*** Sebastian Gonzales, Felipe Feijoo, Franco Basso, Vignesh Subramanian, Sriram Sankaranarayann, Tapas K. Das. IEEE Transactions on Smart Grid, vol. 13, no. 4, pp. 3059-3068, 2022
22. ***A two-stage stochastic Stackelberg model for microgrid operation with chance constraints for renewable energy generation uncertainty.*** Yolanda Matamala, Felipe Feijoo. Applied Energy 303 (2021): 117608.
23. ***A two stage cap-and-trade model with allowance re-trading and capacity investment: The case of the Chilean NDC targets.*** Pia Amigo, Sebastían Cea-Echenique, Felipe Feijoo. Energy, 2021.
24. ***US energy system transitions under cumulative emissions budgets*** Felipe Feijoo, Gokul Iyer, Jae Edmonds, Matthew Binsted, Leon Clarke. Climatic Change, 1-17, 2020. https://doi.org/10.1007/s10584-020-02670-0
25. ***Stranded Asset Implications of the Paris Agreement in Latin America and the Caribbean.*** Matthew Binsted, Gokul Iyer, James A. Edmonds, Adrien Vogt-Schilb, Ricardo Arguello, Angela Cadena, Ricardo Delgado, Felipe Feijoo, André F. P. Lucena, Haewon C. McJeon, Fernando Miralles-Wilhelm, Anjali Sharma. Environmental Research Letters, 2019.
26. ***Climate and carbon budget implications of linked future changes in CO2 and non-CO2 forcing.*** Felipe Feijoo, Bryan K Mignone, Haroon S Kheshgi, Corinne Hartin, Haewon McJeon and Jae Edmonds. Environmental Research Letters, Volume 14, Number 4, 2019.
27. ***The Future of Natural Gas Infrastructure Development in the United States.*** Felipe Feijoo, Gokul Iyer, Pralit Patel, Marshall Wise, Leon Clarke, Sriram Sankaranarayanan, and Sauleh Siddiqui. Applied Energy, Volume 228, 15 October 2018, Pages 149-166.
28. ***U.S. Energy Sector Impacts of Technology Innovation, Fuel Price, and Electric Sector CO2 Policy: Results from the EMF 32 Model Intercomparison Study.*** Elke L. Hodson, Maxwell Brown, Stuart Cohen, Sharon Showalter, Marshall Wise, Frances Wood, Justin Caron, Felipe Feijoo, Gokul Iyer, Kathryne Cleary. Energy Economics, Volume 73, June 2018, Pages 352-370.
29. ***North American Natural Gas Model: Impact of cross-border trade with Mexico.*** Felipe Feijoo, Daniel Huppmann, and Sauleh Siddiqui. Energy (2016), Volume 112C, pp. 1084-1095, DOI: 10.1016/j.energy.2016.06.133.
30. ***Emissions control vial carbon policies and microgrid generation: A bilevel model and Pareto analysis.*** Felipe Feijoo, Tapas K. Das. Energy, Volume 90, p. 1545-1555, ISSN 0360-5442.
31. ***Design of Pareto Optimal CO2 cap-and-trade Policies for Deregulated Electricity Networks.*** Felipe Feijoo, Tapas K. Das. Applied Energy, Volume 119, April-15, Pages 371-383, 2014.
32. ***A Computationally Efficient LMP Forecast Model for Real Time Electricity Markets.*** Felipe Feijoo, Walter Silva, and Tapas K. Das, Energy Conversion and Management 113 (2016) 27–35.

Grants and Awards

Grants

- **Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT)** 2026-2029
  Regular Project ***Role: PI.*** *USD 120,000*
  - **Title**: DECARB-R+J: Advancing Deep Decarbonization Pathways through Endogenous Modeling of Resilience, Justice, and Renewable Integration.
- **Asia-Pacific Economic Cooperation (APEC)** 2025
  EWG 104–105 ***Role: PI.*** *USD 16,000*
  - **Title**: Building Resilient Energy Policies in Asia-Pacific: Certification of Hydrogen and its Derivatives in APEC Economies and Its Role in Driving the Market.
- **Agencia Nacional de Investigación y Desarrollo (ANID)** 2024
  FOVI Project ***Role: PI.*** *USD 30,000*

- **Title**: EquiEnergy: Empowering Just Transitions for Energy Efficiency and Decarbonization.

- **Croatian Science Foundation** 2024
  Research Project ***Role: Co-PI.*** *USD 250,000*
  - **Title**: AI-Aided Energy Planning for the Next Phase of Transition.

- **Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT)** 2024
  Regular Project ***Role: Co-PI.*** *USD 120,000*
  - **Title**: Strategic Plan to Encourage the Spread of Electric Vehicles and Distributed Photovoltaic Systems in the Residential Sector of Chile.

- **Vicerrectoría de Investigación, Creación e Innovación, PUCV** 2024
  DI Centenario ***Role: PI.*** *USD 50,000*
  - **Title**: HEAT: Health, Energy, and Transportation AI-Aided for Smart Cities.

- **Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT)** 2022
  Regular Project ***Role: PI.*** *USD 120,000*
  - **Title**: Interrelation between the Energy–Water–Food Nexus and Power-to-X for Deep Decarbonization Pathways Towards 100% Renewable Energy Systems (INTERNEXUS).

- **Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT)** 2018
  Initiation Project ***Role: PI.*** *USD 75,000*
  - **Title**: Energy Transitions for Reaching Climate Targets: The 1.5°C Energy–Water–Food Nexus (ENTER-1.5N).

- **Dirección General de Vinculación con el Medio, PUCV** 2020
  DGVM-PUCV ***Role: PI.*** *CLP 1.7M (approx. USD 3,000)*
  - **Title**: Sport Medicine Data Science Center MEDS-PUCV.

- **International Collaboration Promotion Program for Research Institutions** 2024–2025
  ANID ***Role: PI.*** *USD 30,000*
  - **Title**: International Collaboration Promotion Program for Research Institutions.

- **Advanced Human Capital Attraction Grant** 2018
  MEC / CONICYT ***Role: PI.*** *CLP 7.6M (approx. USD 15,000)*
  - **Title**: Advanced Human Capital Attraction Grant.

- **Provost's Postdoctoral Diversity Fellowship** 2017
  Johns Hopkins University ***Role: PI.*** *USD 63,639*
  - **Title**: North American Natural Gas Market Model: Infrastructure Needs and Trade in North America.

Last Seminars, Panels and conference presentations (over 50 seminars and invited presentations)

1. **SDEWES Conference**, Paphos, Dubrovnik, Rome, Cartagena, others 2021-2026. *20+ papers presented, 4 panel presentations, 1 plenary.*
2. **37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems - ECOS 2024** Rodes, 2024. *2 papers presented.*
3. **INFORMS** Annual Meeting, 2011 to 2022, United States. *20+ papers presented.*
4. **4th LA SDEWES Conference** Viña de Mar, 2024. *2 papers presented.*

Teaching

- **Pontificia Universidad Católica de Valparaíso, University of Salamanca, University of South Florida**
  - **Environment, Energy and Health, Energy Planning, Operations Research, Stochastic Models, Advance Analytic and Machine Learning, Game Theory and complementarity optimization**:

Service

1. Co-Chair for the Americas - Sustainable Development of Energy, Water, and Environmental Systems - SDEWES.
2. Member of the International Scientific Committee - Sustainable Development of Energy, Water, and Environmental Systems - SDEWES.
3. INFORMS Student chapter Advisor 2025 - Summa Cum Laude.
4. Cluster chair for the Energy cluster of Energy, Natural Resources and the Environment (ENRE), INFORMS, 2018 and 2019.
5. Volunteer at STEM Achievement in Baltimore Elementary Schools (SABES) program 2015-2016.
6. Journal Reviewer: Nature Energy, International Journal of Electrical Power and Energy Systems, Applied Energy, IEEE Transactions on Power Systems, Energy.