

IACOPO SAVELLI

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Fields of Interest

- **Energy policy:** reforms and policy recommendations to enable the transition of the energy system towards net-zero carbon emission
- **Energy economics:** electricity pricing and tariffs, generation and network investments
- **Electricity market design:** wholesale electricity markets, capacity markets, community energy and peer-to-peer markets

CURRENT WORK

- **Postdoctoral Researcher (RTDa – Applied Economics)** 01/2023 – Present
Bocconi university Milan, IT
Research topics:
 - PI of the project “GREENER: Decarbonising the energy system by incentivising energy storages in the right places” funded with €150k (PNRR funds for young researchers)

PREVIOUS WORK

- **Postdoctoral Researcher (1 year and 4 months)** 09/2021 – 12/2022
University of Edinburgh Edinburgh, UK
Research topics:
 - How smart contracts can unlock value in energy systems

- **Postdoctoral Researcher in Energy Market Design (2 years)** 09/2019 – 09/2021
University of Oxford Oxford, UK
Research topics:
 - New incentive schemes for low-carbon technologies
 - Local electricity market design and integration with existing national markets
 - Capacity markets and the missing money problem

- **Research Associate (3 months)** 05/2019 – 08/2019
University of Bath Bath, UK
Research topic:
 - Transmission network investments: planning, revenue adequacy and optimal tariff design

EDUCATION

- **University of Siena** 10/2015 – 10/2018
Ph.D. in Engineering and Information Science Siena, IT
Thesis: “Towards the Integration of Electricity Markets: System-wide and Local Solutions”
Viva voce defense: 18 February 2019

- **Baruch College – Exchange student (6 months) – GPA 4.0** 02/2014 – 06/2014
Master in Financial Engineering/Business Administration New York, NY

- **University of Siena** 11/2011 – 09/2014
Master in Finance – Grade: 110/110 cum laude Siena, IT

- **University of Macerata** 09/2008 – 11/2011
Bachelor in Economics – Grade: 110/110 cum laude Macerata, IT

HONORS & AWARDS

- 1st prize - *Best conference paper award* - 17th European Energy Market Conference (EEM), 2020.
- *Seal of Excellence* – for the proposal “Energy community design to support the post Covid-19 recovery” submitted under the Horizon 2020’s

Marie Skłodowska-Curie actions.

NATIONAL/INTERNATIONAL COLLABORATION

- Member of the Energy Revolution (EnergyREV) Consortium (UKRC ref. EP/S031863/1) for 2 years (2019-2021). EnergyREV is an academic consortium in the UK with 22 Universities and over 60 academics. Within this consortium, I successfully achieved the deliverables D5.1 and D6.1 within the WP3.2, developing new solutions to integrate local energy markets at the national scale.

FUNDING

- **Principal Investigator** 01/2023 – Present
Project title: “GREENER: Decarbonising the energy system by incentivising energy storages in the right places”
Peer-reviewed project funded with **€150,000** (PNRR young researcher funds), aiming at investigating the role of grid-scale storage in decarbonising the Italian energy system. Milan, IT
- **Co-Investigator** 11/2021 – 02/2022
Project title: “A new design paradigm to incentivise low-carbon technologies in the UK”
Peer-reviewed project within the Energy Revolution Consortium (UKRC ref. EP/S031863/1), funded with **£37,862**, aiming at developing new incentive schemes for renewables (www.energyrev.org.uk/news-events/news/energyrev-funds-additional-smart-local-energy-system-research/) Oxford, UK

TEACHING

- **University of Oxford, “Electricity Market Laboratory”, 3 hours** 03/2020 – 03/2022
within the “Economics and Markets” course (MSc Energy Systems) Oxford, UK
Contents:
 - Theory: Functioning of wholesale electricity markets. European day-ahead market orders. Uniform pricing vs pay-as-bid. Pool markets vs continuous trading. Introduction to nodal pricing.
 - Exercises: The students have to use Python to develop an electricity market model to determine nodal prices using economic dispatch, based on merit order, and considering network constraints. The students have also to solve an optimal network investment problem.
- **University of Siena, “Energy Market” module, 24 hours** 11/2018 – 04/2019
within the “Electric System and Energy Market” course Siena, IT
Contents
 - Introduction to the economic theory that regulates the market equilibrium. Concepts of demand, supply, surplus, social welfare and elasticity. Perfect and imperfect competition and main tools to determine the presence of market power.
 - Differences between spot and forward markets. Instruments for managing price risk (futures, options, contracts for difference, and financial transmission rights).
 - Bilateral trading, pool trading, pay-as-bid, uniform pricing. Reserve market. Auction and continuous trading. Types of European market orders. Nodal pricing.
- **University of Siena, 20 hours** 2016 – 2018
within the course of “Models for Financial Applications” Siena, IT
Contents
 - time series analysis and class exercises with ARIMA and ARCH/GARCH models.

SUPERVISION

- **PhD candidates:**
 - Ms Xia Yuxin, research topic: new incentive mechanisms to better support energy investments, University of Edinburgh
 - Ms Xiyu Ren, research topic: how local energy communities could help reduce system-wide energy costs, University of Oxford
- **Master's students:**
 - Mr Sequera Jimenez Francisco, thesis title TBD, MSc in Sustainable Energy Systems, University of Edinburgh, 2021/2022
 - Mr Zhang Huilai, thesis title TBD, MSc in Electrical Power Engineering, University of Edinburgh, 2021/2022
 - Mr Evan Chee Ng, thesis title: “Determining Cost-Optimal Pathways for Low-Carbon Power System Transition in Great Britain: A Two-Stage Stochastic Optimization Approach”, MSc in Energy Systems, University of Oxford, 2020/2021
 - Mr Armen Danielian, thesis title: “Energy Supply in the Aftermath of Natural Disasters”, MSc in Energy Systems, Univ. of Oxford, 2019/2020

ENGAGEMENT with POLICYMAKERS

• Environmental Audit Committee (UK Parliament)

- Call for evidence - "Technological Innovations and Climate Change: Community Energy". Written evidence and opinions submitted by Iacopo Savelli and Thomas Morstyn, March, 2021 (<https://committees.parliament.uk/writtenevidence/23693/pdf/>).

• Department for Business, Energy and Industrial Strategy (BEIS), UK

- Engagement with BEIS for developing a new design paradigm to incentivise low-carbon technologies in the UK, which resulted in the paper titled: "Putting wind and solar in their place: Internalising congestion and other system-wide costs with enhanced contracts for difference in Great Britain", Energy Economics, 2022.

LIST OF PUBLICATIONS

• Journal papers

Under Review	
[J.10]	Iacopo Savelli , Thomas Morstyn, Alexander Teytelboym, "A transmission and generation capacity market with network externalities", submitted to <i>Energy</i> (16,706 words)
Published	
[J.9]	Iacopo Savelli , Jeffrey Hardy, Cameron Hepburn, Thomas Morstyn, "Putting wind and solar in their place: Internalising congestion and other system-wide costs with enhanced contracts for difference in Great Britain", <i>Energy Economics</i> , vol. 113, 2022.
[J.8]	Farhad Billimoria, Filiberto Fele, Iacopo Savelli , Thomas Morstyn, Malcolm McCulloch, "An insurance mechanism for electricity reliability differentiation under deep decarbonization", <i>Applied Energy</i> , Volume 321, 2022.
[J.7]	Thomas Morstyn, Iacopo Savelli , Cameron Hepburn, "Multiscale design for system-wide peer-to-peer energy trading", <i>One Earth</i> , vol. 4, Issue 5, Cell Press, 2021.
[J.6]	Iacopo Savelli , Thomas Morstyn, "Better together: Harnessing social relationships in smart energy communities", <i>Energy Research and Social Science</i> , vol. 78, 2021.
[J.5]	Iacopo Savelli , Thomas Morstyn, "Electricity prices and tariffs to keep everyone happy: A framework for fixed and nodal prices coexistence in distribution grids with optimal tariffs for investment cost recovery", vol. 103, <i>Omega</i> , 2021.
[J.4]	Iacopo Savelli , Antonio De Paola, Furong Li, "Ex-ante dynamic network tariffs for transmission cost recovery", <i>Applied Energy</i> , v. 258, 2020.
[J.3]	Bertrand Cornélusse, Iacopo Savelli , Antonio Giannitrapani, Simone Paoletti, Antonio Vicino, "A Community Microgrid Architecture with an Internal Local Market", in <i>Applied Energy</i> , vol. 242C, pp. 547-560, 2019.
[J.2]	Iacopo Savelli , Bertrand Cornélusse, Antonio Giannitrapani, Simone Paoletti, Antonio Vicino, "A new approach to electricity market clearing with uniform purchase price and curtailable block orders", in <i>Applied Energy</i> , Vol. 226, pp. 618 - 630, 2018.
[J.1]	Iacopo Savelli , Antonio Giannitrapani, Simone Paoletti, Antonio Vicino, "An Optimization Model for the Electricity Market Clearing Problem with Uniform Purchase Price and Zonal Selling Prices", in <i>IEEE Transaction on Power System</i> , Vol. 33, no. 3, pp. 2864 - 2873, 2018.

• Conference Proceedings

[C.7]	Iacopo Savelli , Cameron Hepburn, Thomas Morstyn, "Nodal and fixed price coexistence in distribution networks with optimal investment planning and tariff design", 17 th Intern. Conf. on the European Energy Market (EEM), 1-6, 2020. Received the 1st prize - Best conference paper award.
[C.6]	Antonio De Paola, Iacopo Savelli , Thomas Morstyn, "A novel ex-ante tariff scheme for cost recovery of transmission investments under elasticity of demand", 17 th International Conf. on the European Energy Market (EEM), 1-6, 2020
[C.5]	Iacopo Savelli , Bertrand Cornélusse, Simone Paoletti, Antonio Giannitrapani, Antonio Vicino, "A Local Market Model for Community Microgrids", <i>Proceedings of the 58th Conference on Decision and Control (CDC)</i> , Nice, France, 2019.
[C.4]	Simone Paoletti, Iacopo Savelli , Andrea Garulli, Antonio Vicino, "A bilevel programming approach to piecewise affine system identification", <i>Proceedings of the 58th Conference on Decision and Control (CDC)</i> , Nice, France, 2019.
[C.3]	Laurine Duchesne, Iacopo Savelli , Bertrand Cornélusse, "Sensitivity Analysis of a Local Market Model for Community Microgrids", in <i>Proceedings of the 13th IEEE PES Power Tech Conference</i> , Milano, Italy, 2019.
[C.2]	Iacopo Savelli , Bertrand Cornélusse, Antonio Giannitrapani, Simone Paoletti, Antonio Vicino, "Introducing Block Orders in the Italian Day-Ahead Electricity Market", in <i>Proceedings of the 15th International Conference on the European Energy Market (EEM)</i> , Lodz, Poland, 2018, pp. 1-6.
[C.1]	Iacopo Savelli , Antonio Giannitrapani, Simone Paoletti, Antonio Vicino, "An Exact Solution to the Market Clearing Problem with Uniform Purchase Price", in <i>Proceedings of IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe)</i> , Torino, 2017, pp 1-6.

• Book chapters

- Iacopo Savelli, "Market microstructure, VPIN and market maker's behavior", pp. 41-76, in *Polymorphic Crisis*,

ISBN 978-88-6056-410-8, 12/2014.

- **Seminars**

- "*How the European day-ahead electricity market works*", University of Liege, Belgium, December 18th, 2017.
- "*A New Approach for Solving the Market Clearing Problem with Uniform Purchase Price and Curtailable Block Orders*", European Commission's Joint Research Centre (JRC), November 28th, 2017, Ispra, Italy.

SKILLS

Computer skills: Python, Vyper, Blockchain, Pyomo, Cplex, GAMS, High Performance Computing, GitHub, MATLAB, VBA/Excel, SQL
GRE Quant: 168/170