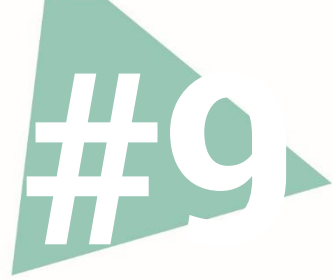




TradeRES

New Markets Design & Models for
100% Renewable Power Systems

NEWSLETTER



TradeRES 9th semester achievements

As we conclude the latter part of the “fifth” year of the project. Between February 2024 and November 2024, we achieved significant progress, published numerous works, and actively participated in conferences, further advancing our mission.

Final TradeRES Webinar

On November 19th, 2024, we hosted the free Final TradeRES Webinar, “Electricity Market Design for ~100% Renewable Power Systems”, highlighted the project's final results and explored critical questions shaping the future of Europe’s renewable energy landscape. This webinar is based on a few questions:

- How can we ensure secure energy supply and system adequacy?
- Are capacity mechanisms essential in a renewable-dominant market?
- How can we support vRES (variable Renewable Energy Sources) and de-risk investments?
- What reforms are needed in short-term markets and ancillary services?
- How can local markets and energy communities integrate into the pan-European framework?

The webinar was a resounding success, drawing around 250 participants (live). The event featured interesting levels of interactivity between the audience and speakers, with an innovative platform allowing attendees to vote on the most compelling questions, which resulted in an engaging discussion.

If you couldn’t attend or wish to revisit any part of the session, the recording is now available online: <https://www.youtube.com/live/F5VqN4h3Ke0>



Participation in Workshops

We participated in various workshops, engaging, sharing insights, and gathering feedback to showcase project outcomes:

- ABM4Energy Conference on Agent-Based Modeling for Energy Economics and Energy Policy. Freiburg, Germany, March, 2024;



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- PhD Workshop PSI-LEA, the Chair for Energy Systems Analysis at ETH Zürich, Rastatt, Germany, July 2024
- EERA JPs ESI & e3s workshops. Kaunas, Lithuania, June 2024
- ICEBERG Interim Workshop: Scalable Optimization of Power Systems with Flexible Demand and Renewable Supply. Athens, Greece, June 2024
- LARS Autumn school of the Florence School of Regulation, Florence, Italy, September 2024

- European Climate and Energy Modelling Platform, Online, October 2024
- More details at: <https://traderes.eu/events>

Other Events

Participation in several events, such as:

- 20th International Conference on the European Energy Market (EEM24), Istanbul, Turkey
- 8th International Hybrid Power Plants & Systems Workshop, Azores, Portugal
- 33 Young Energy Economists and Engineers Seminar, Leuven, Belgium, May 2024
- IAEE 45th INTERNATIONAL CONFERENCE ISTANBUL Turkey, June 2024
- 33rd European Conference on Operational Research, Copenhagen, Denmark, June 2024
- International conference on Time Series and Forecasting, Canaria, Spain, July 2024
- International Ruhr Energy Conference 2024, Essen, Germany, August 2024
- 22nd International Conference on Intelligent Systems Applications to Power Systems, Budapest, Hungary, September 2024
- 2024 Wind & Solar Integration Workshop, Helsinki, Finland, October 2024

Thesis

Several theses were completed during this period, congratulations to all:

PhD

- António Couto: Exploring Complementarity between Wind and Solar PV generation for Large-scale Integration into Power Systems.
- Heliö Niina: Analysing flexibility in energy system investment planning: Impact of variable renewable energy, temporal structures and operational constraints.
- Johannes Kochems: Demand Response Potentials for Germany. Micro-economic assessment of overall economic potential estimates.
- Johanndeiter Silke: The economics of variable renewables in wholesale markets - towards a future-proof market design.

MSc

- Catarina Marcelino: Local Communities and Electricity Markets: Forecast of net consumption on a residential scale.
- João Santos: Participação da geração renovável no mercado de reservas de um sistema elétrico.
- Nikolaus Hellner: Entwicklung von Gebotsstrategien für Auktionen von erneuerbaren Energien - Development of Bidding Strategies in Auctions for Renewable Energies



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Dissemination

Journals

- Ingrid Sanchez, David Ribó-Pérez, Milos Cvetkovic, Johannes Kochems, Christoph Schimeczek, Laurens .J. de Vries, "Can an energy only market enable resource adequacy in a decarbonized power system? A co-simulation with two agent-based-models", Applied Energy, April 2024 | [DOI](#)
- Meysam Khojasteh , Pedro Faria , Zita Vale, "Adaptive robust strategy for energy and regulation Service Management in Local Energy Communities", Applied Energy, January 2025 | [DOI](#)
- Johannes Kochems, Kristina Nienhaus, Evelyn Sperber und Christoph Schimeczek, "Förderinstrumente für erneuerbare Energien auf dem Prüfstand: Erkenntnisse des europäischen Forschungsprojekts TradeRES", et - Energiewirtschaftliche Tagesfragen, volume 74, 11, 2024 | [DOI](#)

Conferences

- Hugo Algarvio, António Couto, Ana Estanqueiro, Rui Carvalho, Gabriel Santos, Ricardo Faia, Pedro Faria, Zita Vale, "Reduction of the Market Splitting Occurrences: A Dynamic Line Rating Approach for the 2030 Iberian Day-ahead Market Scenarios," 2024 20th International Conference on the European Energy Market (EEM), Istanbul, Turkiye, 2024 | [DOI](#)
- Hugo Algarvio, António Couto, Ana Estanqueiro, "A Double Pricing and Penalties "Separated" Imbalance Settlement Mechanism to Incentive Self Balancing of Market Parties," 2024 20th International Conference on the European Energy Market (EEM), Istanbul, Turkiye, 2024 | [DOI](#)
- Hugo Algarvio, António Couto, Ana Estanqueiro, "A Methodology for Dynamic

Procurement of Secondary Reserve Capacity in Power Systems with Significant vRES Penetrations," 2024 20th International Conference on the European Energy Market (EEM), Istanbul, Turkiye, 2024 | [DOI](#)

- Nikolaos Chrysanthopoulos, Yuen Yin Chan, Goran Strbac, "Local Energy Markets: Structural Elements and the Effects of Upscaling," 2024 20th International Conference on the European Energy Market (EEM), Istanbul, Turkiye, 2024 | [DOI](#)
- Johannes Kochems; Evelyn Sperber; Kristina Nienhaus; Christoph Schimeczek, "Market Designs, Actor Decisions and Market Values: Assessment of Remuneration Mechanisms for Future Electricity System Scenarios" 2024 20th International Conference on the European Energy Market (EEM), Istanbul, Turkiye, 2024 | [DOI](#)
- António Couto, Hugo Algarvio, Ana Estanqueiro, "An optimized probabilistic forecasting approach for hybridized wind power plants," 8th International Hybrid Power Plants & Systems Workshop (HYB 2024), Hybrid Conference, Azores, Portugal, 2024 | [DOI](#)
- Meysam Khojasteh, Bruno Canizes, Gabriel Santos, Pedro Faria, Zita Vale, "Energy management in energy communities with participation in MIBEL," 8th International Hybrid Power Plants & Systems Workshop (HYB 2024), Hybrid Conference, Azores, Portugal, 2024, pp. 302-307 | [DOI](#)
- Nikolaos Chrysanthopoulos, Dawei Qiu, Goran Strbac, "Local energy communities: enhancing collective investments and profitability of distributed energy



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- resources," 8th International Hybrid Power Plants & Systems Workshop (HYB 2024), Hybrid Conference, Azores, Portugal, 2024, pp. 289-294 | [DOI](#)
- Niina Helistö, Silke Johanndeiter, Juha Kiviluoma, "Accelerating wind power investments through lower financing costs", 23rd Wind & Solar Integration Workshop, 2024 | [Link](#)

More details at: <https://traderes.eu/papers>

Webtool

The Market Web Decision Tool, developed by the TradeRES consortium, bridges research and action in European energy decision-making. It enables stakeholders and policymakers to explore the impacts of diverse market designs through a user-friendly platform.

The final version of this tool consists of two key components: a model explanation area, which simplifies complex simulations into accessible insights, and a results visualization area, which provides interactive visualizations to understand market dynamics.

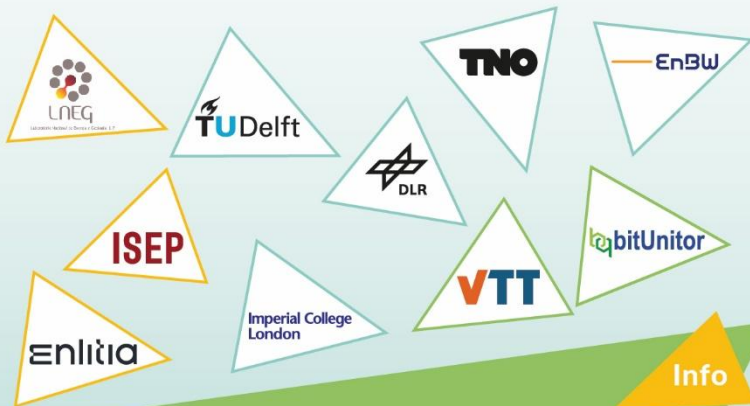
More than a static repository, the tool fosters collaboration, experimentation, and transparency,

empowering informed decisions and encouraging diverse perspectives. It simplifies complexity and drives positive change in the future of European energy. Try the webtool for free at: [here](#)



Conclusion of the Project

As TradeRES reaches its conclusion, we are proud to share the outcomes and contributions that aim to drive the future. We delivered impactful results, including the innovative Market Web Decision Tool ([link](#)), a range of publications and datasets ([link](#)), guides ([link](#)), deliverables and several insights ([link](#)). Check our website for more information (<https://traderes.eu/>).



The TradeRES project developed and tested innovative electricity market designs to meet society's needs of a (near) 100% renewable power system. The market design was tested using sophisticated models and simulation tools, for scenarios constructed to reproduce real-world characteristics of local, national and regional electricity markets.



<https://traderes.eu>
info@TradeRES.eu

Start date

1 February 2020

End date

30 November 2024

Overall budget: € 3 988 713,75



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 864276