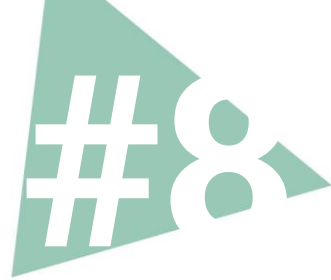




# TradeRES

New Markets Design & Models for  
100% Renewable Power Systems

## NEWSLETTER

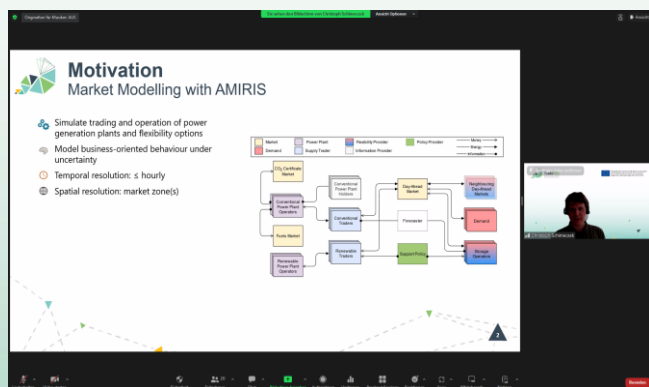


### TradeRES 8<sup>th</sup> semester achievements

The conclusion of the latter part of the fourth year of our project represents a noteworthy milestone. Throughout the period from July 2023 to January 2024, we attained significant milestones, published various works, and actively engaged in conferences.

### German workshop

On October 12<sup>th</sup>, 2023, a workshop on Market Designs in Germany and the EU were organized in collaboration with DLR, EnBW, and VTT, drew significant attendance and provided valuable insights. We delved into comprehensive research in the first segment, presenting interesting results.



The second part featured an engaging hands-on tool demonstration, empowering participants

with practical skills. This event proved essential for those dedicated to advancing the energy sector.

### Iberian workshop

On November 24<sup>th</sup>, 2023, the hybrid TradeRES Iberian Stakeholders' Workshop featured a dynamic agenda. In the first session, we explored market design options and presented our latest modeling results. The second session provided hands-on experience for energy system modelers with project-enhanced tools—Spine Toolbox, MASCEM, and REStTrade. Last section involved a comprehensive discussion on strengths, weaknesses, and future challenges.



### Dutch Workshop

On November 21<sup>st</sup>, 2023, the TradeRES partners TNO and TU Delft organised a stakeholders



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workshop in Amsterdam in order to discuss the modelling and preliminary results of the Dutch case study on market design of a ~100% renewable power system in the Netherlands. In addition to the benchmark modelling results from the European electricity market model COMPETES-TNO, in particular the key features and some first results of the agent-based model EMLabpy were presented and discussed. The workshop was closed by a more general discussion among NL stakeholders and project team members on market design options and implication for a climate-neutral power system in the Netherlands.

## Events

In this period the TradeRES project participated in several events, such as:

- Summer school of Barcelona School of Economics (BSE), July 10<sup>th</sup> to 14<sup>th</sup>, 2023
- International Association for Energy Economics (IAEE), July 24<sup>th</sup> to 27<sup>th</sup>, 2023
- PhD workshop by Ruhr-University Bochum's, July 31<sup>st</sup> to August 1<sup>st</sup>, 2023
- European Climate and Energy Modelling Forum (ECEMP), October 6<sup>th</sup>, 2023
- TradeRES workshop on Market Designs in Germany and the EU, October 12<sup>th</sup>, 2023
- 22nd Wind & Solar Integration Workshop, October 8<sup>th</sup> to 11<sup>th</sup>, 2023
- TradeRES Iberian Stakeholders' Workshop, November 24<sup>th</sup>, 2023
- ENLIT Europe, November 28<sup>th</sup> to 30<sup>th</sup>, 2023.

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

## Enlit Europe

Thriving presence and active participation marked our impactful presence at major European exhibition throughout the event (at Paris, France).



TradeRES  
228 seguidores  
1 m

Great opportunity to share with the keen to **Enlit Europe** community the achievements and outcomes of the **TradeRES** project. Three days full of excellent talks, great discussions and fascinating networking. [...ver mais](#)

[Visualizar tradução](#)



Zita Vale e mais 10 pessoas

1 compartilhamento

Gostei Comentar Compartilhar

Comentar em nome de TradeRES

Impressões orgânicas: 142 impressões

Pré-visualizar resultados



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## Dissemination

### Journals

- Dawei Qiu, Yi Wang, Junkai Wang, Chuanwen Jiang, Goran Strbac, "Personalized retail pricing design for smart metering consumers in electricity market", Applied Energy, 348, July 2023 | [DOI](#)
- Ricardo Faia, Fernando Lezama, João Soares, Tiago Pinto, Zita Vale, "Local electricity markets: A review on benefits, barriers, current trends and future perspectives", Renewable and Sustainable Energy Reviews, 190, November 2023 | [DOI](#) (High Impact Factor 15,9)
- Meysam Khojasteh, Pedro Faria, Luis Gomes, Zita Vale, "Energy trading strategy of community shared energy storage", Electrical Engineering, December 2023 | [DOI](#)

### Conferences

- Nikolaos Chrysanthopoulos, Dimitrios Papadaskalopoulos, Goran Strbac, "On the Effects of Tariff Structures on the Revenue Streams of Local Energy Systems", 27th International Conference & Exhibition on Electricity Distribution (CIRED), Rome, Italy, June 12-15, 2023 | [DOI](#)
- Ana Estanqueiro, Goran Strbac, Nikolaos Chrysanthopoulos, Gabriel Santos, Silke Johandeiter, Hugo Algarvio, etc., "Innovative electricity market designs to support a transition to (near) 100% renewable power system: first results from H2020 TradeRES project," 22nd Wind and Solar Integration Workshop (WIW 2023), Copenhagen, Denmark, September 26-28, 2023 | [DOI](#)
- More details at: <https://traderes.eu/papers>

## Interview A

### Q: Who is Helleik Syse?



Helleik is a researcher at [bitYoga](#). He holds an MSc in Renewable Energy Systems and the Environment from the University of Strathclyde. In parallel to his work at bitYoga, he is also a PhD student at the University of Stavanger, specializing in Sustainable Energy Systems in Buildings.

### Q: What does the company bitYoga do, and what's your role in the TradeRES project?

bitYoga is a technology company specializing in blockchain solutions. In deliverable 5.2 in the TradeRES project, bitYoga is the task leader. We're working on developing and implementing a blockchain-based platform for renewable energy trading.

Our focus is on creating a decentralized system that enable efficient, transparent peer-to-peer energy transactions within Local Energy Communities (LECs). By leveraging blockchain, we aim to facilitate more sustainable and self-sufficient energy practices, contributing to the project's goal of enhancing renewable energy adoption and optimizing energy trading mechanisms.

### Q: A lot of people talk about blockchain technology, but what is it really, can you explain it in a way that is easy to understand?

Blockchain is like a digital ledger or record book that's shared across multiple computers. Imagine it as a notebook where each page (block) contains a list of transactions or actions. Once a page is full,



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it's sealed and linked to the previous page, forming a chain of pages (blocks).

Each new page has information about the previous one, making it very secure. Because this notebook is not kept in one place but copied across many computers (decentralized), it's hard to tamper with. Everyone can see the transactions, ensuring transparency, but they can't change them once written, ensuring security.

This technology, initially created for digital currencies like Bitcoin, is now being explored for other uses, including secure and transparent trading in areas like renewable energy.

**Q: That's a good transition to the next question, can you elaborate on the advantages of how blockchain technology be relevant for renewable energy trading?**

Blockchain technology can enhance renewable energy trading through its decentralization, enabling direct peer-to-peer transactions and reducing reliance on central grid intermediaries. Its transparent, immutable ledger fosters trust by verifying the renewable origin of energy. Smart contracts automate trading based on supply and demand, improving efficiency. Additionally, blockchain's ability to tokenize energy simplifies trading and incentivizes the adoption of renewable sources, potentially transforming energy markets towards greater sustainability.

**Q: What do you see as the biggest challenges of using blockchain for renewable energy trading?**

As with all new technologies there is a significant path from investigating something from a research perspective, to having a commercially viable and integrated solution. As of now, I think these are the three major obstacles to using blockchain for energy trading in LECs:

- Scalability: Handling many transactions

efficiently is difficult, which can limit the system's growth.

- Regulatory Hurdles: Navigating evolving regulations in both blockchain and energy sectors is complex and varies by region.

**Integration with Existing Systems:** Merging blockchain technology with established energy grids and market systems requires significant technical coordination and investment.

**Q: What's the next steps in TradeRES?**

In the current phase of the TradeRES project, we're focusing on refining our energy models based on internal workshops and stakeholder feedback. The next step is to apply these models to assess market designs. We're looking forward to present the findings from D5.2 to a wider audience at the end of the project.

## Interview B

**Q: Who is Tiago Santos?**



With a master's degree in electrical engineering, he is currently Enlitia's CEO. Tiago leads the software development team and has developed a wide range of products in the areas of weather forecasting, renewable production forecasting, intelligent monitoring systems

and decision support systems.

**Q: How does Enlitia contribute to the development and testing of innovative electricity market designs in TradeRES?**

[Enlitia](#) contributes by implementing and customising methodologies from the TradeRES framework to enhance variable renewable energy sources (vRES) forecasts. The main



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goal is to illustrate how precise predictions for renewable power can significantly affect market models.

Through continuous refinement and application of these methodologies, Enlitia aims to contribute to a more nuanced comprehension of renewable energy dynamics. This, in turn, supports well-informed decision-making in the ever-evolving energy market landscape, exerting influence on the models that govern it.

## Q: In what ways does Enlitia's work align with or contribute to political agendas promoting sustainable and green energy solutions?

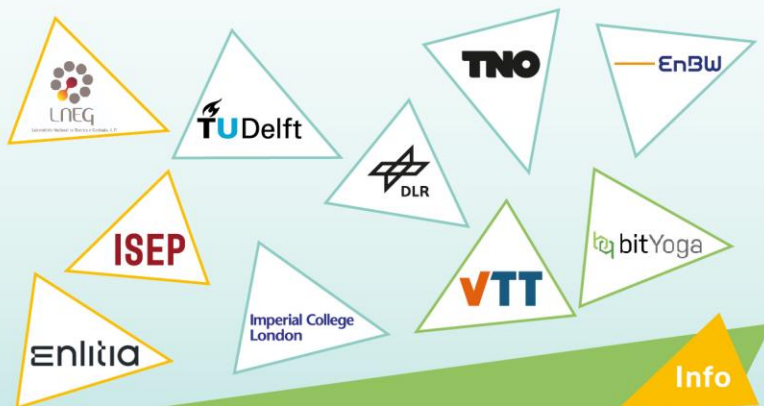
Within the TradeRES context, Enlitia actively aligns its efforts with political agendas that champion sustainable and green energy solutions. By specialising in the implementation and customisation of methodologies for forecasting vRES, Enlitia contributes to the larger objectives of promoting environmentally conscious energy practices. Through its work, Enlitia supports TradeRES' commitment to facilitating sustainable energy transitions and actively engages in advancing green energy solutions, aligning its efforts with political strategies within the dynamic

landscape of the energy market.

## Q: How does the TradeRES project align with Enlitia's mission and values?

The TradeRES project shares a common objective with Enlitia, as it focuses on developing and testing innovative electricity market designs to support the integration of a high share of variable renewable energy sources (VREs). Enlitia's commitment to providing tools for analyzing and managing vast amounts of data generated by renewable energy assets aligns with the TradeRES project's goal of creating economically efficient market designs in a renewable energy landscape.

Moreover, both Enlitia and the TradeRES project recognize the importance of leveraging technology and data analytics to overcome challenges associated with the exponential growth of the renewable energy industry. The TradeRES project's emphasis on involving key players from the energy sector aligns with Enlitia's approach of delivering a holistic picture of portfolio status, regardless of technology, to enable faster and safer decision-making.



The TradeRES project will develop and test innovative electricity market designs that can meet society's needs of a (near) 100% renewable power system. The market design will be tested in a sophisticated simulation environment in which real-world characteristics such as actors' limited foresight into the future and risk aversion are included.



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### Start date

1 February 2020

### End date

30 November 2024

**Overall budget: € 3 988 713,75**



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