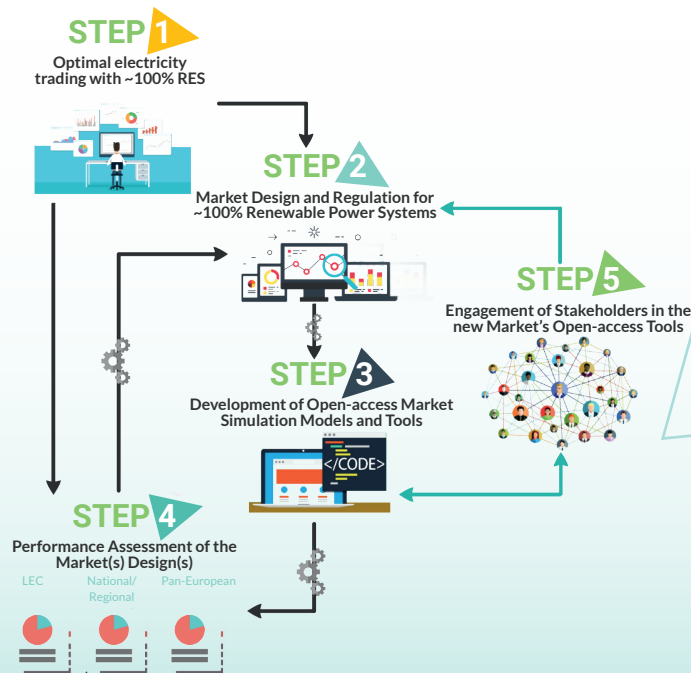


Main objectives of the project

- 1 To develop new electricity markets design for ~100% renewable power systems;
- 2 To model and simulate to the new market agents, procedures and mechanisms;
- 3 To develop open-access tools and analyzing ~100% renewable electricity markets;
- 4 To engage key stakeholders in the development, improvement and use of the new market simulation tools;

Iterative approach



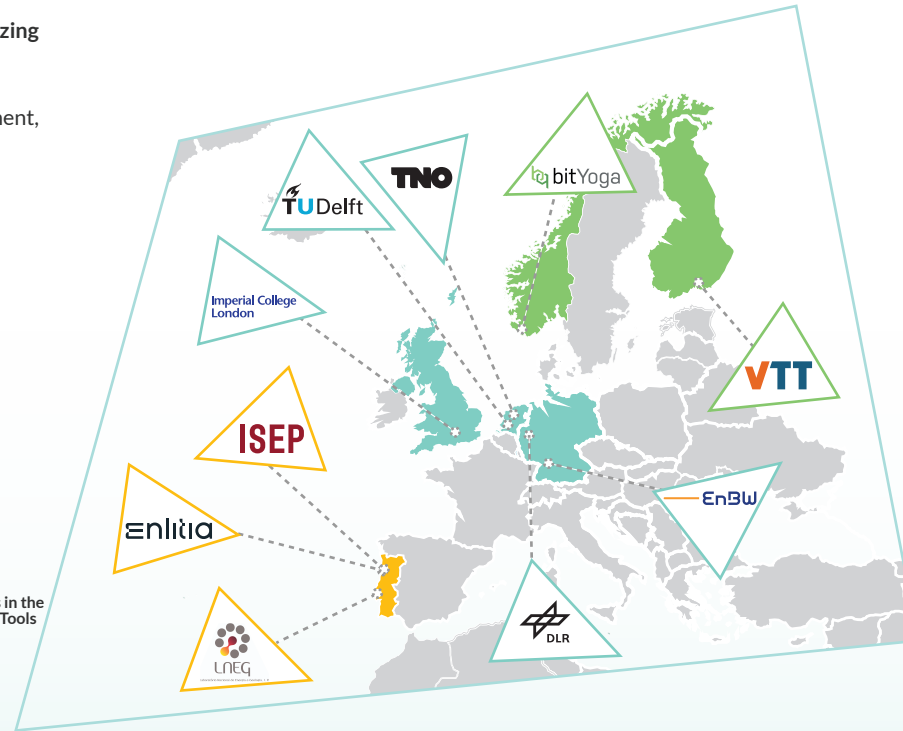
TradeRES

New Markets Design & Models for 100% Renewable Power Systems



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New Markets Design & Models for 100% Renewable Power Systems



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

New Markets Design & Models for 100% Renewable Power Systems

The TradeRES project will develop and test innovative electricity market designs that can meet society's needs of a (near) 100% renewable power system. A long-term sustainable market design needs to provide efficient operational and investment incentives for an electricity system that is characterized by a high share of variable renewable energy sources (VREs) by increasing integration with other energy sectors, e.g. transport and hydrogen, and by increasing participation of flexible electricity demand from households to industrial consumers.

Furthermore, this market design needs to provide security of supply by ensuring sufficient controllable electricity generation capacity whilst being economically efficient. Finally, despite the variability of solar and wind energy, the market risks should be allocated in an efficient and socially accepted way. This should also safeguard that consumers are not exposed to extreme swings in their energy expenses.

In this sense, this project aims at finding market designs that are economically efficient in the above setting. To achieve these goals the project will use an iterative methodology and involve the key players from the energy sector in order to achieve and test the most suitable market designs.

The project TradeRES – Tools for the Design and Modelling of New Markets and Negotiation Mechanisms for a ~100% Renewable European Power System, is funded by the EU framework programme for research and innovation Horizon 2020 under the call H2020-LC-SC3-2019-ES-SCC.



TradeRES

New Markets Design & Models for 100% Renewable Power Systems

The work plan of TradeRES project is organized in 7 work packages, one (WP1) for coordination and management and another (WP7) for efficient dissemination and exploitation of results. The research and development are concentrated in four work packages (WP2, WP3, WP4 and WP5) that interface closely with the stakeholders (operators of market, aggregators, VRE power plants, energy network communities) through a dedicated work package (WP6).

In this project, a market design will be developed that meets these objectives. It 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. The performance of the market design – with respect to quantitative indicators such as security of supply, average costs to consumers and investment cost recovery – will be compared to a benchmark calculation of an optimal power system, which will also be developed in this project. We will involve representatives of all key stakeholder groups – consumers, large and small power generators, network operators and government in all phases of the process, in the market design as well as the development of the optimization and simulation models, in order to ensure the social acceptability of the research process and outcomes.

