TradeRES

New Markets Design & Models for
100% Renewable Power Systems

NEWSLETTER

#1

Introduction to TradeRES

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.

Project objetives

The ambition of this project is to develop and test an innovative electricity market design that can meet society's needs in a near 100% renewable power system.

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 design process

Such 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, that is highly integrated with sectors such as home heating and cooling and transport, and needs to provide efficient incentives for the participation of all demand, from households to industrial consumers. It needs to provide security of supply by ensuring sufficient controllable electricity generation capacity without becoming too costly. And despite the variability of solar and
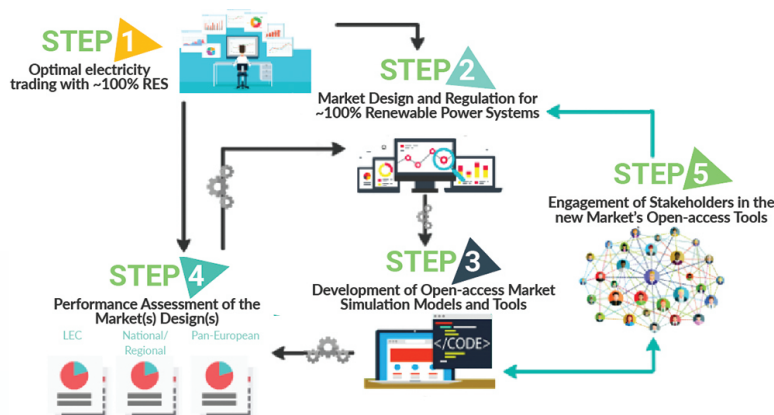
wind energy the price risk must be limited.
In this project, a market design will be developed that meets these objectives. It will be tested in a sophisticated simulation environment in which real-world characteristics.

The performance of the market design will be compared to a benchmark calculation of an optimal power system. 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 and in the development of the optimization and simulation models, to ensure the social acceptability.
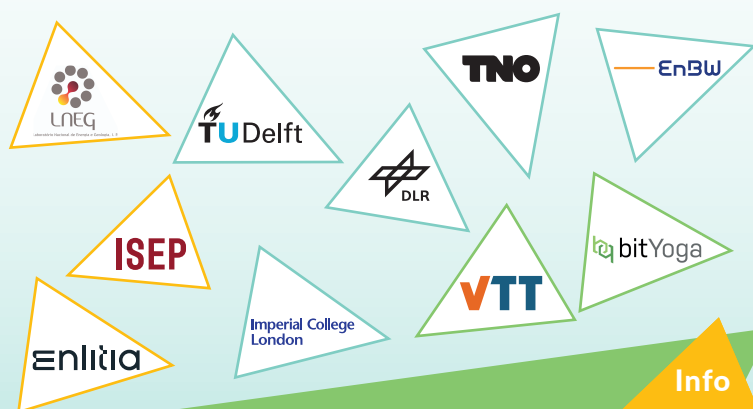
Info

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.

Work plan

The work plan of TradeRES project is organized in 7 work packages, as shown below.

TradeRES kick off

TradeRES Kick off meeting took place on 10th and 11th March 2020 at LNEG premises, in Lisbon. The kick-off meeting counted on the participation of all project partners, either in a presential or virtual form. This meeting allowed the involved partners to have the first discussions on the project, with special focus on the initial planned activities. It was also a floor for discussion on project management and internal communication guidelines and processes.

Start date
1 February 2020

End date
31 January 2024

Overall budget: € 3 988 713,75

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