TradeRES

New Markets Design & Models for
100% Renewable Power Systems

TradeRES background and Purpose

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Challenges for electricity market design

- Assumption: no carbon emissions allowed
- Both supply and demand are weather dependent
- Year-on-year weather variations are a challenge
  - In reality:
    - System adequacy
    - System operations, short-term trading
  - For modeling
- Assumption: availability of hydrogen for power generation.

The world changed during this project

- When writing the proposal:
  - The energy-only market was the default market design.
  - There were high expectations for cheap and abundant hydrogen.
- The kickoff was during the last days before the Covid lock-down.
- The 2022 energy crisis changed the policy narrative

Market design

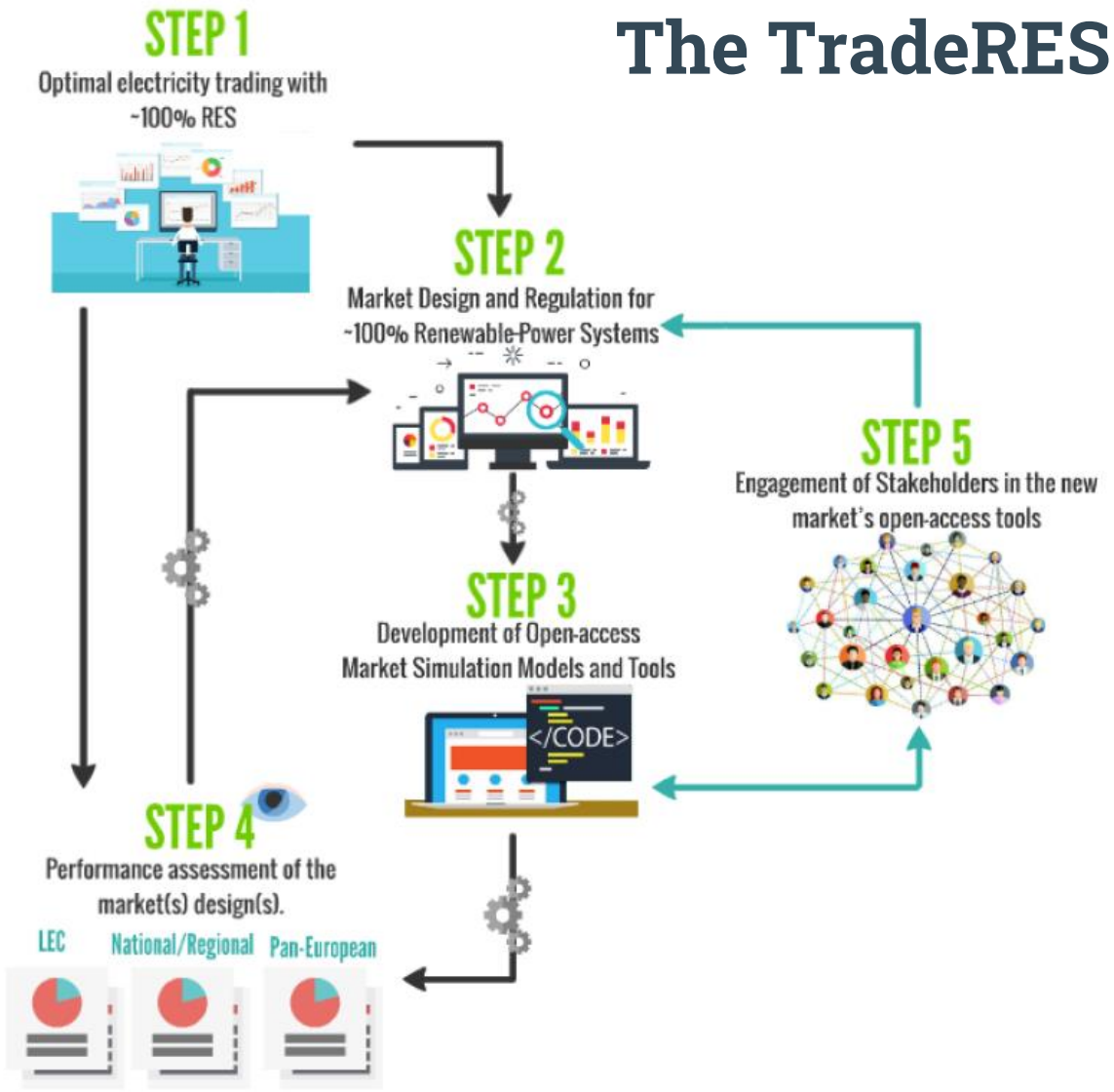
- System adequacy
- VRE support schemes
- Short-term markets and ancillary services
- Local markets and energy communities

Modeling approach

- Optimization models and agent-based models
  - Why both?

- Model coupling
  - Pros and cons
  - Operational versus investment models

The TradeRES project approach



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