technische universität dortmund

HONOR

Holistic flexibility market integration of cross sectoral energy sources

> *A holistic approach to flexible power; including market, grid, sector-coupling and cyber-security as well as stakeholder needs.*

The project aims at development and evaluation of a trans-regional flexibility market mechanism, integrating cross-sectoral energy flexibility at a community-wide level. The specific developments include a market mechanism for grid flexibility, industrial grade supervision solutions, data-driven state monitoring applications and cyber-security assessments. In order to develop a tailor made as well as replicable solution, community stakeholders will be involved through co-creation activities as well as stakeholder networks from Norway, Germany and Denmark. Complementing the economic and risk evaluation, simulation studies of flexibility operations and cyber-security assessments, the operation of control systems algorithms and the online monitoring and detection solutions will be implemented as demonstration in a relevant environment (TRL 6). The sector-coupling market mechanism will be implemented and demonstrated in an operational environment in Wunsiedel (Germany) (TRL 7).

Project Duration

01.12.2019 - 30.11.2022

Project Budget

Total Budget: € 3,075,034.-

Funding: € 2,193,750.-

Project Coordinator

TU Dortmund, ie^3 (Germany)

Project Partners

- Technical University of Denmark (DK)
- KTH Royal Institute of Technology (SE)
- Norwegian University of Science and Technology (NO)
- Danish Energy (DK)
- Foreseeti (SE)
- PSI Software AG (DE)
- SWW Wunsiedel GmbH (DE)

Project Website

www.honor-project.eu

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ERA-Net Smart Energy Systems

Smart Energy Systems ERA-Net

ERA-Net Smart Energy Systems Joint Call 2018

This project has been awarded funding within the ERA-Net SES Joint Call 2018 for transnational research, development and demonstration projects. EUR 33.4 Mio of funding have been granted to 23 projects from 16 regions and countries.

This project has received funding in the framework of the joint programming initiative ERA-Net Smart Energy Systems. The initiative has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements no. 646039 and no. 755970.

Joint Programming for Flourishing Innovation from Local and Regional Trials towards a Transnational Knowledge Community

www.eranet-smartenergysystems.eu

Main Objectives

1. Demonstrate the combined business and operational chain of cross-sectoral coupling and operation of flexibility market and dispatch with local community stakeholders in Wunsiedel,
2. Validate the full technical solution in a relevant trans-national environment, employing state-of-the-art experimental techniques,
3. Assimilate experience from partners and anchor project results by means of workshops with expert end-users (Germany and Denmark) to ensure relevance of the project developments in the local context,
4. Mature existing market platforms for local flexibility services and develop further the concept of a regional and transregional exchange,
5. Develop industrial-grade interoperable decision support, supervision and collaboration platforms and state-of-the-art dispatch and control solutions,
6. Development of innovative data-driven monitoring, detection and verification solutions for the supervision of the flexibility market operation and ICT infrastructure,
7. Development and application of Cyber-security assessment models for the complete trading and operational ICT infrastructure,
8. Provide an overall economic evaluation and risk assessment accounting for market development opportunities and cost of cyber vulnerabilities

Expected Main Results

Determination of stakeholder requirements in the flexibility sector will give a broad and detailed overview of what is already possible and what still needs to change regarding flexible power in electrical grids.

The laboratory demonstration will give insights into the interplay between control center, grid and flexibilities regarding communication as well as functionality. Cyber-security assessment of the communication will help identifying potential weak points and threads.

Testing the market design in Wunsiedel will allow us to understand the applicability of the concept in the real world.