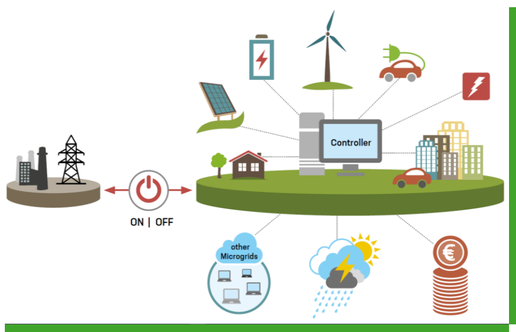


Demonstrators towards 100% Renewable Energy in the Real Laboratory Lead Project RESET

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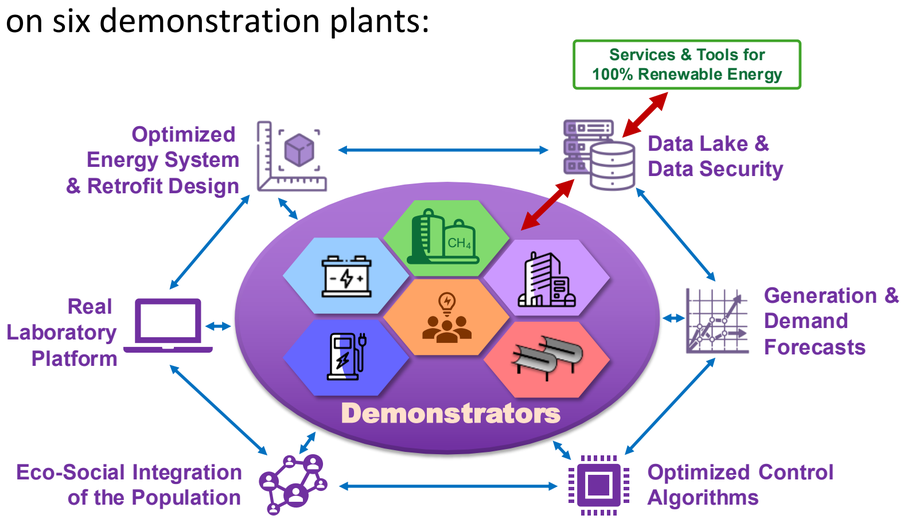
Area 2.3 Microgrids and Smart Energy Communities

Introduction

The lead project RESET – Renewable Energy for Efficiency and Transition – is embedded in the Real Laboratory ENSET located in Lower Austria. Its main goal is the **scientific development** and **validation of methods and tools** to accelerate and support the transition towards **100% renewable energy** supply with the focus on rural regions. RESETs focus is on practically applicable and scalable solutions as a toolbox, such as the following cornerstones:

- **Interoperable data management** system that supports a sophisticated data acquisition, processing and utilization
- **Optimization algorithms** for designing and operating integrated energy systems and efficiency measures
- Integration of the **population** to analyze motivations, barriers and consumer behavior
- **Online platform** that integrates energy system design, energy system monitoring and financing possibilities

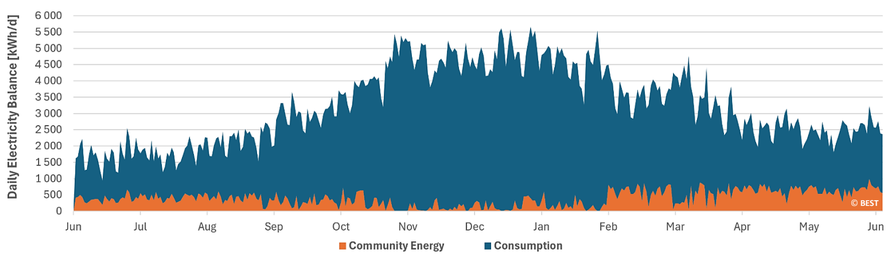
The following illustration shows these cornerstones in relation with the development of tools and services based on six demonstration plants:



As illustrated, the key demonstration plants are the basis of these developments, which are further elaborated in detail.

Demo 1: Energy Community, Waidhofen / Ybbs

- Target: Extended development of **forecasting** methods to predict the generation and consumption of the renewable energy community (REC) and individual members.



Demo 2: Biogas Plant, Japons

- Target: Implementation of a biogas plant and storage model in the **energy system design tool OptEnGrid** to find optimal solutions for the **operation on the electricity market** under sector-coupled settings (heat, gas, power)



Demo 3: Building Retrofit, Neuhofen / Krems

- Target: Overhaul of the **building retrofit** model in OptEnGrid to find the optimal design **together** with other renewable **building-integrated technologies** (heating, cooling, power generation)



Demo 4: Heating Grid, St. Georgen am Walde

- Target: Overhaul of the thermal energy model in OptEnGrid for optimal design of heating grids **integrating solar thermal** energy or **waste heat** together with traditional biomass boilers for a **more efficient operation**





Outlook

As the project started in 2025 and ramps up based on present activities with involved demonstrators 1-4, we are going in the next phase to define the last two demonstrators:

Demo 5: Energy Storage



- Target: Optimized design of new emerging use cases for energy storage systems (e.g. flexibilities, optimized market participation)

Demo 6: EV Charging Infrastructure



- Target: Holistic operation of e-charging parks, optimized design incl. Vehicle-2-Grid (V2G) in e.g. logistics businesses or renewable energy communities

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The lead project RESET (FFG. No. 926697) is funded by the Austrian Funding Agency (FFG) and co-funded by the Government of Lower Austria.

Project Details & Contact Information

Scan here for more details on the RESET Project, the ENSET Real Laboratory initiative and to get in contact:

https://reallabore.at/Projekt/2/reset

ENSET initiative: www.enset.at

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