IElectrix

« Flexibility 2.1 »
"From Demand Response to Renewable Energy Communities"
(public free live webinar: 15th March 2021, 10:00 - 12:30 CET)

# IElectrix H2020 project

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This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 824392.

# General IElectrix project overview

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## The first Horizon 2020 Smart Grid project funded by the European Union involving an actual demonstration in India

**42** months project duration

**2019 - 2022**

with a total **budget** of

**10.7 M€**

### Consortium

**Distribution System Operator**

ENEDIS L'ELECTRICITE EN RESEAU

E.ON Hálózat

e.dis Energie Güssing

**Research Centres and Universities**

Universidad Pontificia ICAI ICADE Comillas Madrid

circe

RWTH Aachen University

**Suppliers**

Life Is On Schneider Electric

Atos

**Research and Consulting firms**

GECO Global

Merit Consulting House

**DSO in charge of replication**

HEDNO

**SMEs**

Hypertech energy labs

Odit-e

**Energy agency**

**Indian DSO**

Tata Power-DDI

A fostering **collaboration** among

**15** European partners

**1** Indian partner

Project Coordinator

ENEDIS L'ELECTRICITE EN RESEAU

Technical Director

E.ON Hálózat

# General IElectrix project overview

## Common goals

- Increased RES integration in the network
- **Improved prosumer implication**
- Improved reliability and resilience of the electricity supply
- Prepare the advent of Local Energy Communities and their integration in the networks

## Implemented solutions

- Storage units
- Energy Management Systems
- Digital substations
- **Demand-side management schemes implemented by the DSO**
- Microgrid and islanding solutions
- LV grid digitalisation

5 real-scale demonstrators

Moew.e demo

Germany

**STROM Güssing demo**

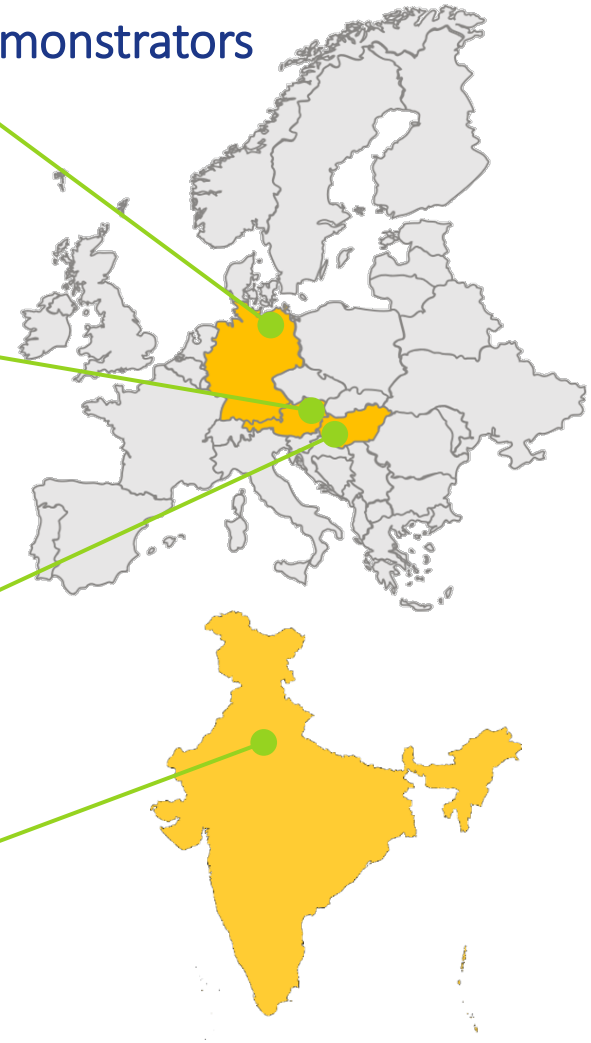
Austria

HELGA demos

Hungary (x2)

SHAKTI demo

India



# Focus on the Austrian demonstration

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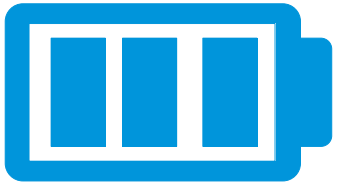
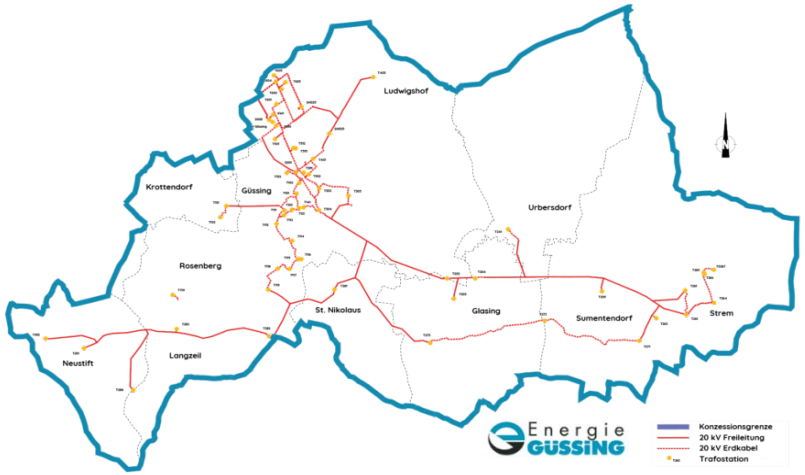
# STROM Güssing

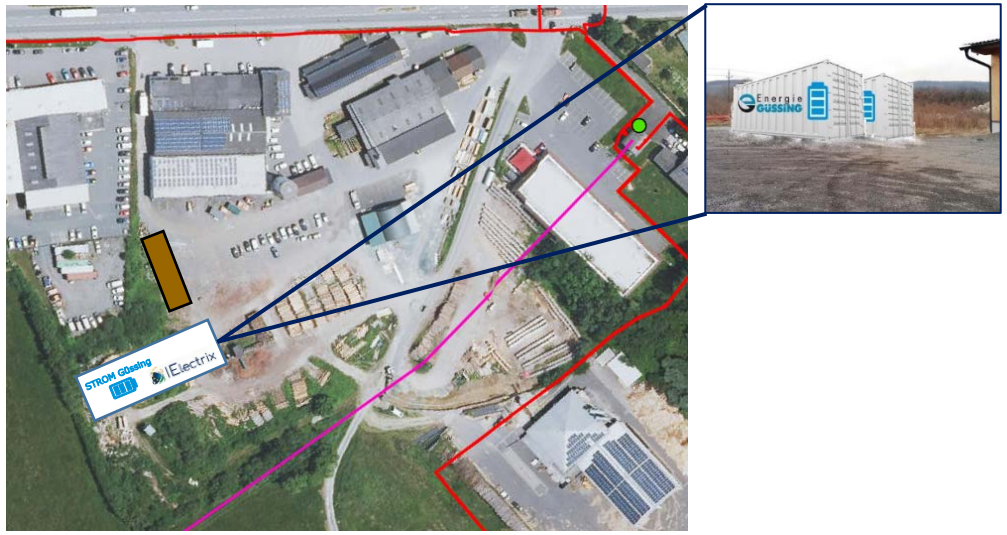


**S**mart Ba**T**tery Ene**R**gy St**O**rage Syste**M**
**Güssing**

# The Austrian demonstration

## Austrian demonstration site




STROM Güssing

Smart BaTtery EneRgy StOrage SysteM Güssing

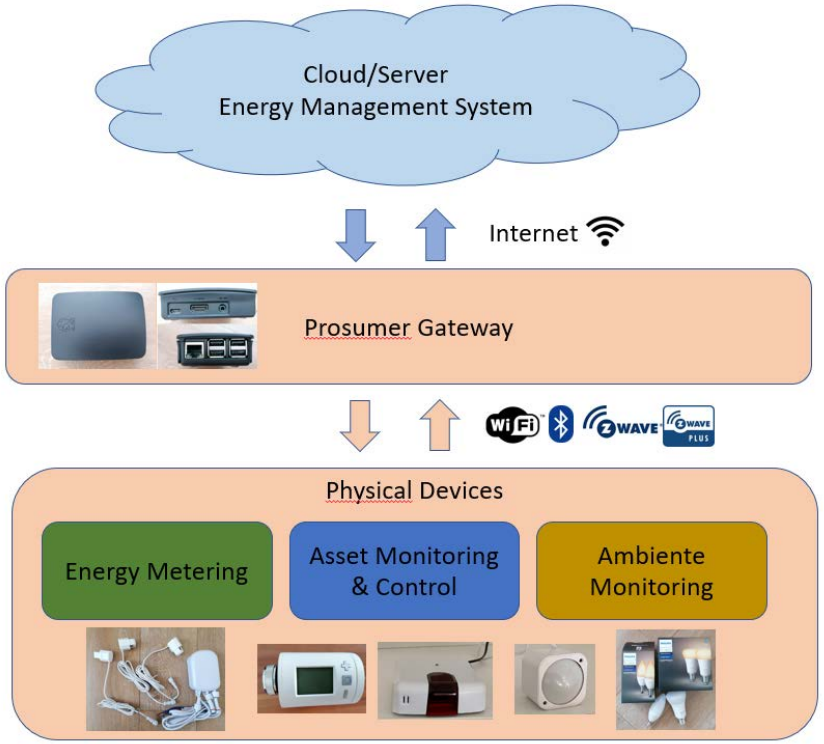
## Main objectives of the Austrian demonstration

- Demonstrate the effectiveness of prototype **flexibility forecasting** and **scheduling** capabilities for local flexibility markets with a variety of assets including **energy storage systems**
- **Improve the resilience** of the local energy system, thanks to the **distributed reactive power control** of the local energy system
- Demonstrate the effectiveness of a **human-centric demand response** framework, enabling the transformation of passive energy consumers into active energy market participants

# The Austrian demonstration

**Human-centric demand response framework**

- Analyze participants available equipment
- Upgrade selected assets with smart home solutions
  - Smart Lighting
  - HVAC monitoring/control
  - Domestic Hot Water system monitoring/control
  - Total Load monitoring
  - Ambiente monitoring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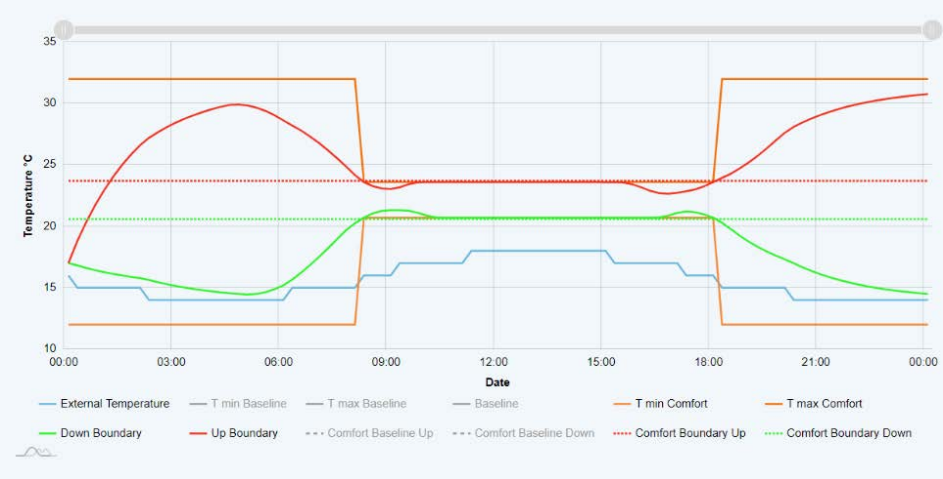
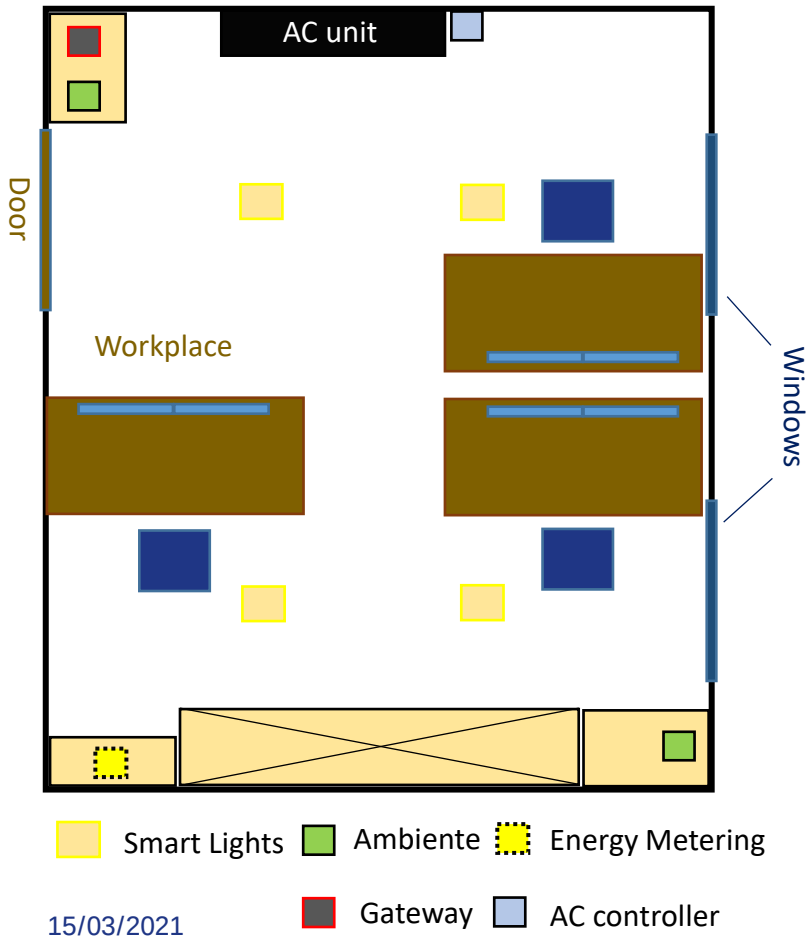
# The Austrian demonstration

## Human-centric demand response framework

- Analysis of participants behaviour and comfort zones
- Calculation of available flexibility including forecasts




- Activate flexibility based on the local energy systems needs
- Demonstrate impact of the DR framework

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# Key takeaways / Summary

- In order to increase acceptance and willingness to participate in DR frameworks:
  - Consider the user behaviour and their comfort zones
  - Automate the process of DR framework participation
  - Include the user feedback to improve the system

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