

# IMPACT\_CASE

## ENERGY SYSTEM MODERNIZATION



### COLLABORATION



### CASE / PROBLEM

The share of distributed energy resources (DER) is constantly growing. However, most DERs are still analog, without any link to smart energy data or system integration as well as the inability to use DERs in most apartments.

The energy IoT company GreenCom Networks and the energy and water supplier RheinEnergie, therefore, aimed to establish a smart city district in the Stegerwaldsiedlung, consisting of 1,614 apartments with numerous DER installed. The district should provide cost-efficient and locally produced green electricity for its tenants.

### SOLUTION

- Install DER on and in buildings containing 688 apartments
- Integrate multiple device types from different manufacturers on one digital platform (Solar PV, heat pumps, battery storages, heating blades, storage tanks, district heating)
- Develop district-wide cross-device optimization to fulfil requirements of tenants , i.e. independence, transparency via app and web apps as well as lower prices
- Enable DSOs & TSOs to predict grid load and use flexibility
- Open new revenue streams for utility & lower emissions

### RESULTS

- CO2 reduction: the elimination of 60% of customers' CO2 emissions
- Energy independence: 70% of the community's energy supply now originates from DERs on-site
- Customer retention: the provider can now offer a full range of services
- Grid balancing: the energy company can use the communities' resources within a virtual power plant (VPP) for flex trading

### INNOVATION AREA

## ENERGY EFFICIENCY

### COST SAVINGS

# 41.500 € p.a.

### CO<sub>2</sub> SAVINGS

# 528 t p.a.

equals the planting of 24.000 trees

### IMPACT VISION 2030

Europe-wide showcase for a connected, localized, low-carbon and resilient energy supply