

# **24/7 intelligent energy-autonomous site**

as an  
Experimental Residential Field Lab

# Background information of the 24/7 project

## Motivation and aim:


- Decarbonisation and sustainability of built environment
- Focus on sustainable energy supply and use

## Challenge:

- Design and control of a local energy system fully supplied from variable RES
- Increased flexibility in energy supply and use
- System integration of flexibility options

# Ambition 24/7

- A (semi-) autonomous and fully self-supporting energy system based on renewable energy sources in **the built environment** that can supply 24/7 The Green Village with all-required energy demands
- The autonomous energy system will be based on proposals of TUD faculties and on proposals of our partners
  - In realizing this ambition we create an infrastructure for an experimental residential integrated energy system based on renewable energy sources.
  - This will give the participants the opportunity to use this infrastructure to further develop hardware and software components and test these also for system integration aspects.



The Green Village provides a **real-life testing ground** with facilities and matchmaking to support projects

Open to public

Real people  
living & working

Flexible &  
modular

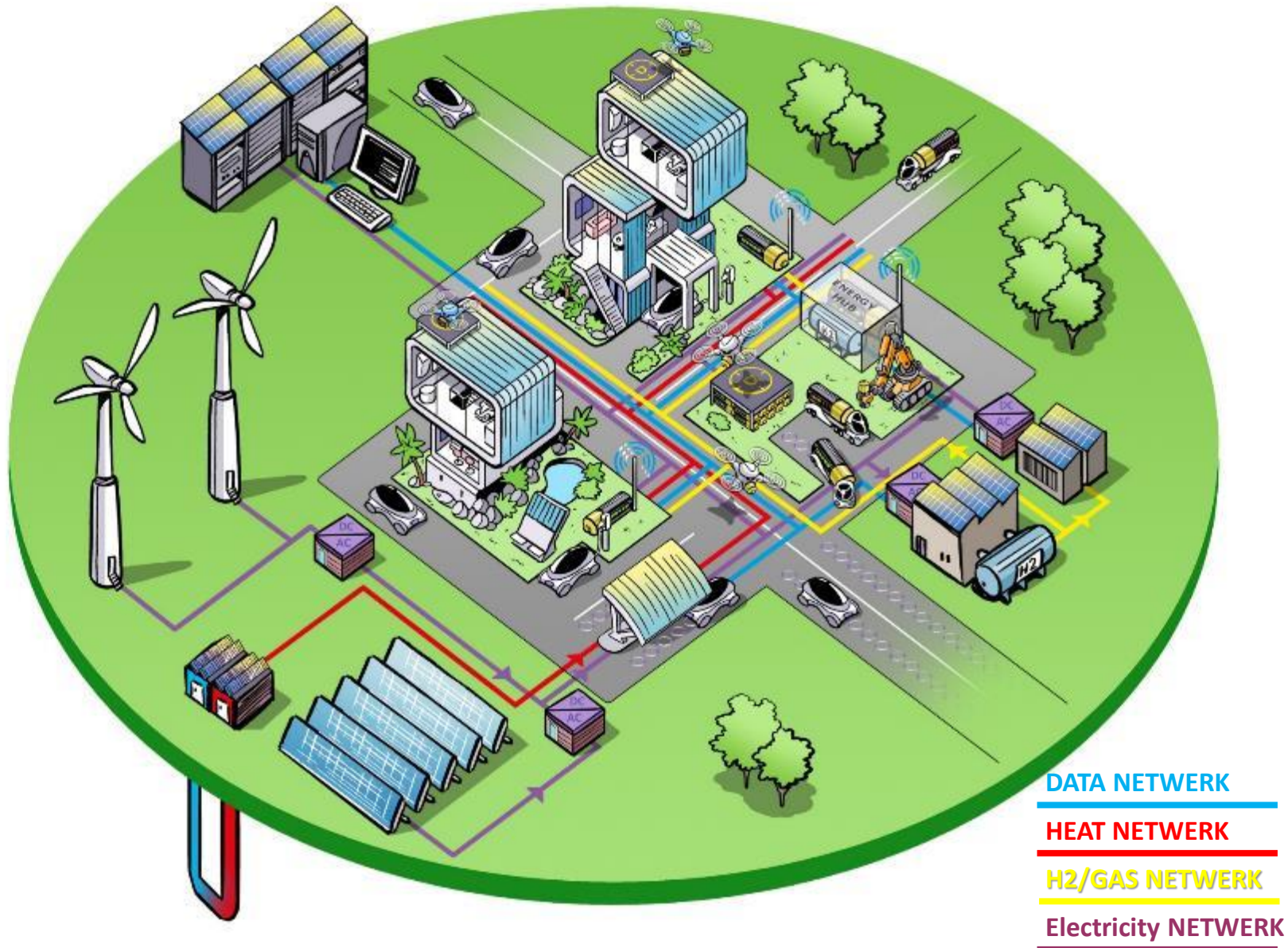
Connecting projects  
to create systems

Construction Code  
not applicable<sup>1)</sup>

# Users place their **own projects** at The Green Village, which also provides **testbeds** for specific contexts



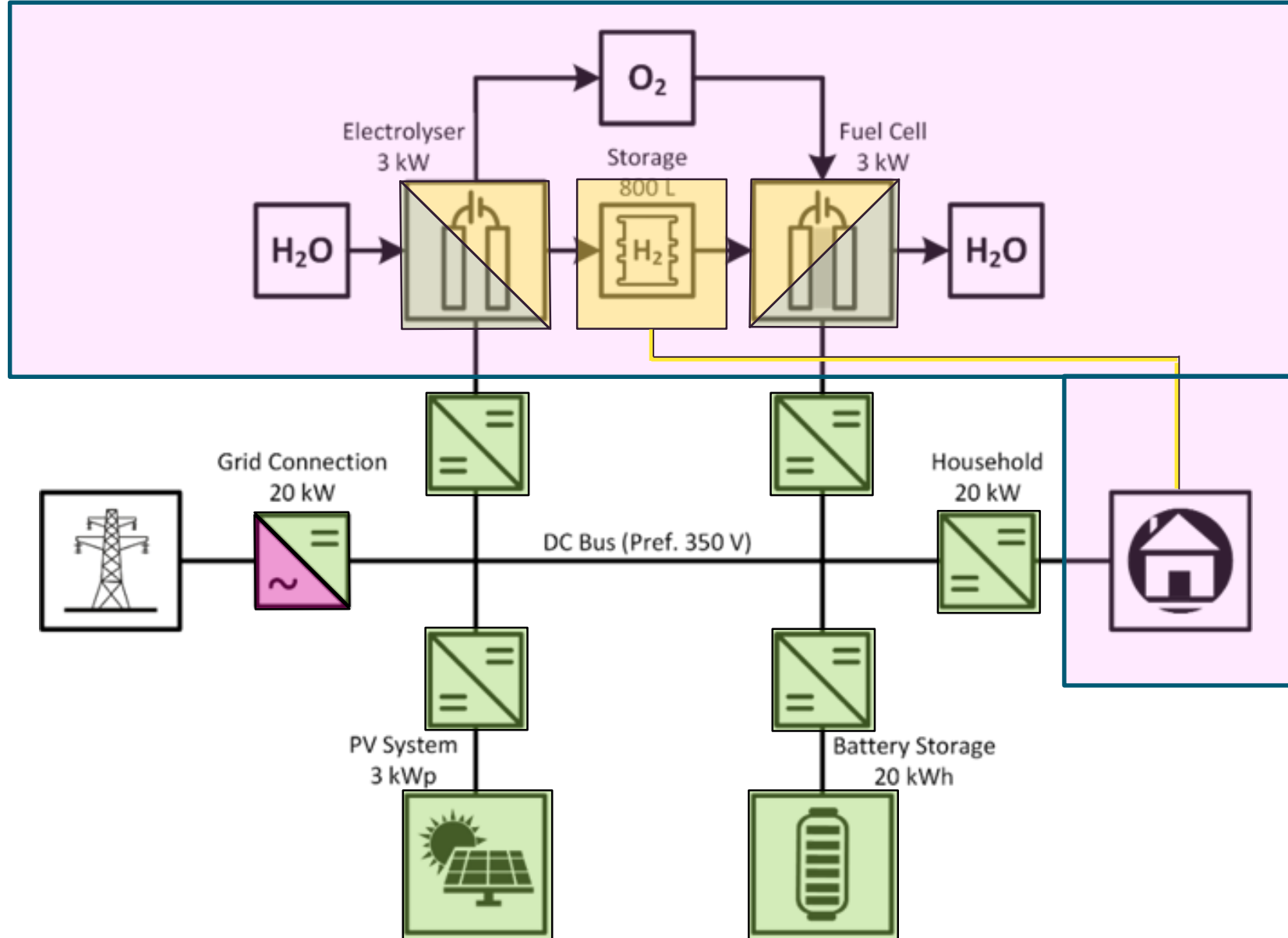
# Intelligent 24/7 energy-autonomous site



## Site:

- Central PV system
- **Distributed PV systems**
- Wind turbines
- Geothermal source
- **Electrolyser -> H2 tank**
- Central battery
- Energy hub
- **H2 -> Fuel cell, boiler**
- Energy infra for houses
- Cars + Charging stations
- **Intelligent control**
  
- Social, legal, economical and behavioural analysis

# Smart Hydrogen-Powered Local Energy System



# Introducing Joel Bosrup CEO Wintersol



Back Up