



# Workshop on Demand Response and Energy Storage Modeling

Faculty of Electrical Engineering and  
Computing University of Zagreb (FER)

Zagreb, June 19, 2018

# About uGRIP

- H2020 ERA Net Smart Grids + project
- Project budget 1.117 M Eur, funding 776 k Eur
- Project partners:
  - FER
  - DTU
  - OFFIS
- Associate partners:
  - Končar KET
  - HEP



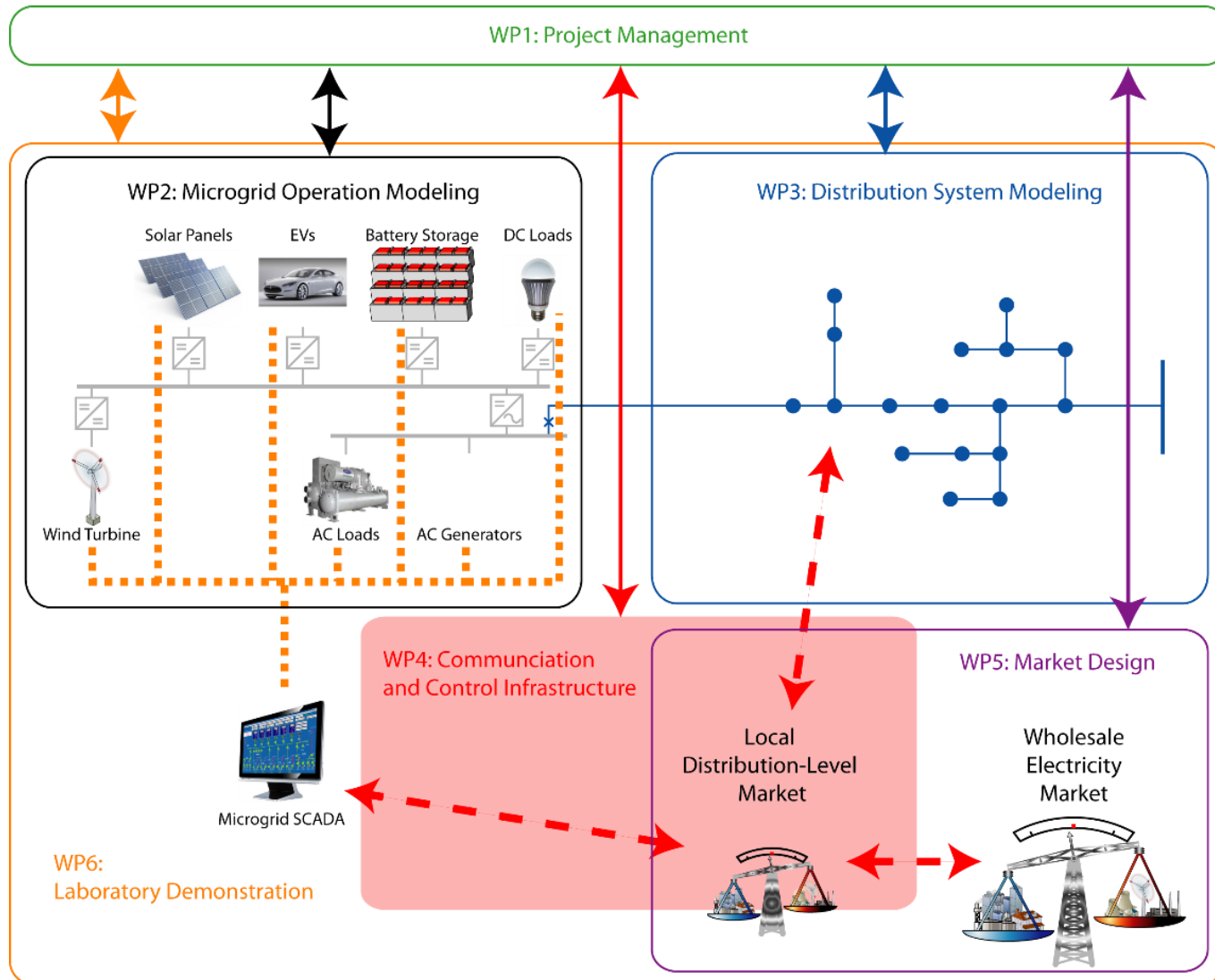
# About uGRIP

- Funded by:
  - FER
  - Croatian Environmental Protection and Energy Efficiency
  - Končar KET
  - HEP
- April 2016 – March 2019

# Objectives of uGRIP

- Assessment of the role of storage and the price responsiveness on the consumer side
- Assessment of microgrid business cases for different countries, i.e. Croatia, Denmark and Germany, based on their respective grid codes and incentive policies
- Development and definition of standardized communication protocols between the microgrid elements and the central computer in charge of the microgrid operation, as well as the microgrid and local (distribution level) electricity markets
- Design and development of a local market to manage the microgrid at the FER-UNIZG laboratory

# Structure of uGRIP



# Objectives of this Workshop

- **Workshop on Demand Response and Energy Storage Modeling**
- Introduce optimization techniques related to integration of demand response and energy storage
- Planning and operation stage
- Introduce research efforts at the Smart Grid Lab

# Workshop Timetable

9:30 – 10:30

## **Predicting the Electricity Demand Response via Data-driven Inverse Optimization**

*Juan Miguel Morales González*

Associate Professor at University of Málaga



# Workshop Timetable

10:30 – 11:30

## **Valuing Demand Response Controllability: a System and Aggregator Perspective**

*Kenneth Bruninx*

Postdoctoral researcher at KU Leuven & EnergyVille





# Workshop Timetable

11:30 – 12:00

## Lunch

*Beef Štrukli*

Eternal PhD student at Cassandra



# Workshop Timetable

12:00 – 13:00

## **Chronological Time-Period Clustering for Optimal Capacity Expansion Planning With Storage**

*Salvador Pineda Morente*

Associate Professor at University of Málaga



# Workshop Timetable

13:00 – 14:00

## **Accurate Battery Operation Modeling**

*Hrvoje Pandžić*

Associate Professor at Faculty of Electrical  
Engineering and Computing University of Zagreb



# Workshop Timetable

14:00 – 14:30

## **Introduction and Demonstration of the Smart Grid Lab**

*Mateo Beus*

PhD Student at Faculty of Electrical Engineering and  
Computing University of Zagreb

