



# Grid-friendly energy communities in PARMENIDES

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EU HORIZON Innovation Actions  
Project no.101096453

# PARMENIDES



- Project name:  
**Plug&play eneRgy ManagEmeNt for hybrID Energy Storage**

- Goals:

- Develop, deploy, validate innovative, interoperable, secure **solutions (PECO & EMS4HESS)**
- Providing **flexibility** services by the utilization of **Hybrid Energy Storage Systems (HESS)**, presenting a **virtual abstraction** of different storage technologies

- Use Cases:



- Baseline Accounting, Ex-post Energy Allocation



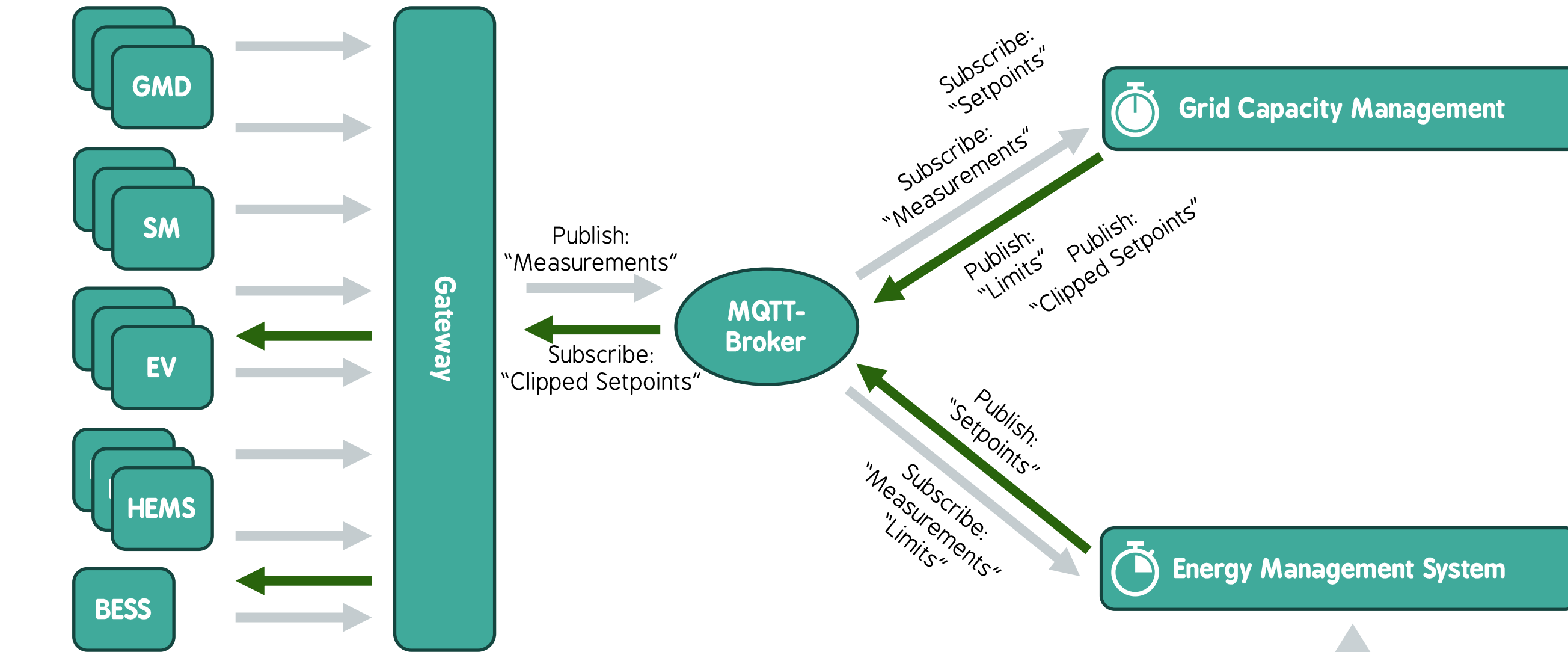
- Participant Optimization, Participant Incentivization, Participant Disregard



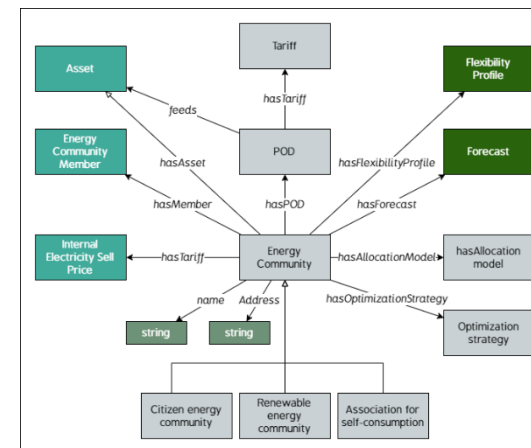
- **Grid Friendliness, Grid Support**



# Grid-friendly Energy Community

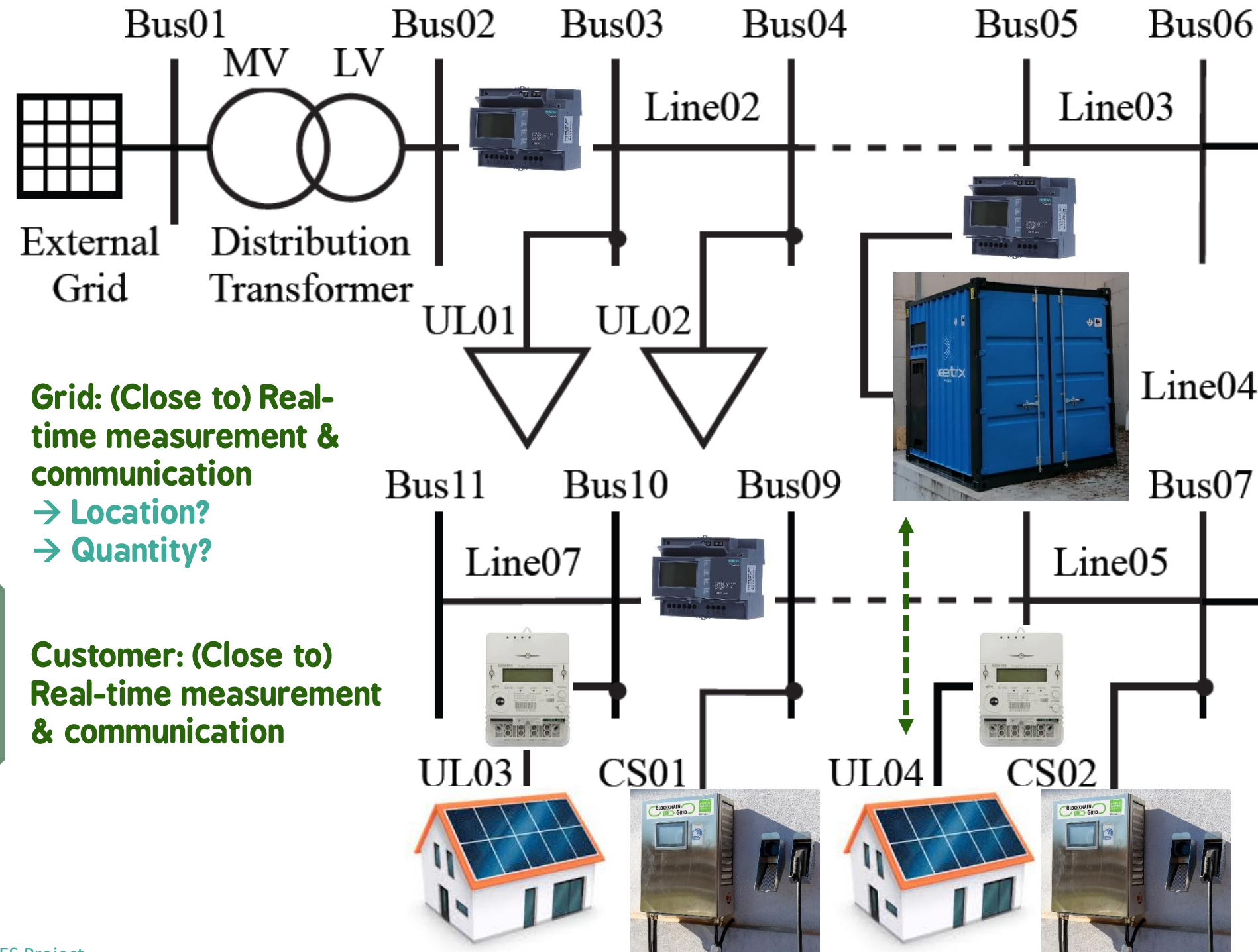


**PARMENIDES Energy Community Ontology (PECO)**



**Pilot-specific instantiation**

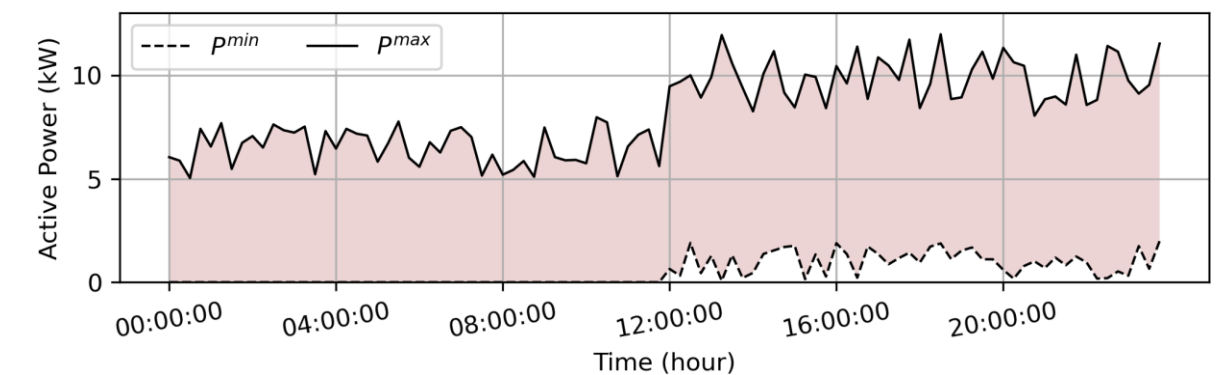
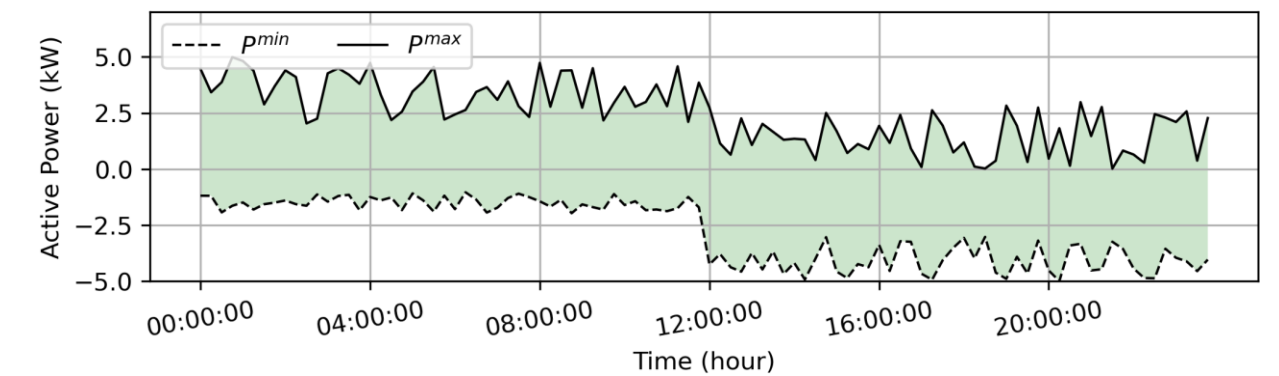
# Grid-friendly Energy Community



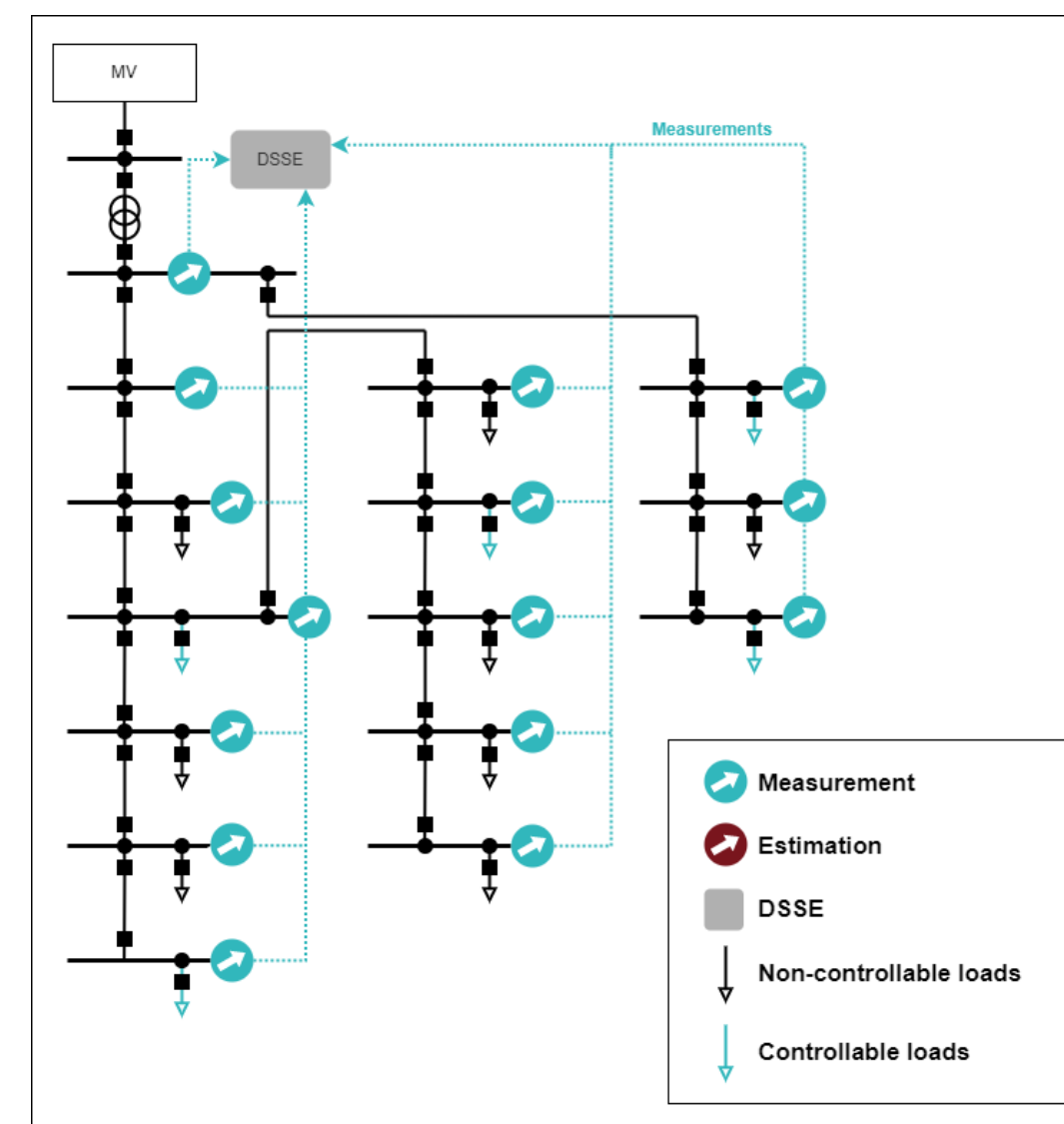
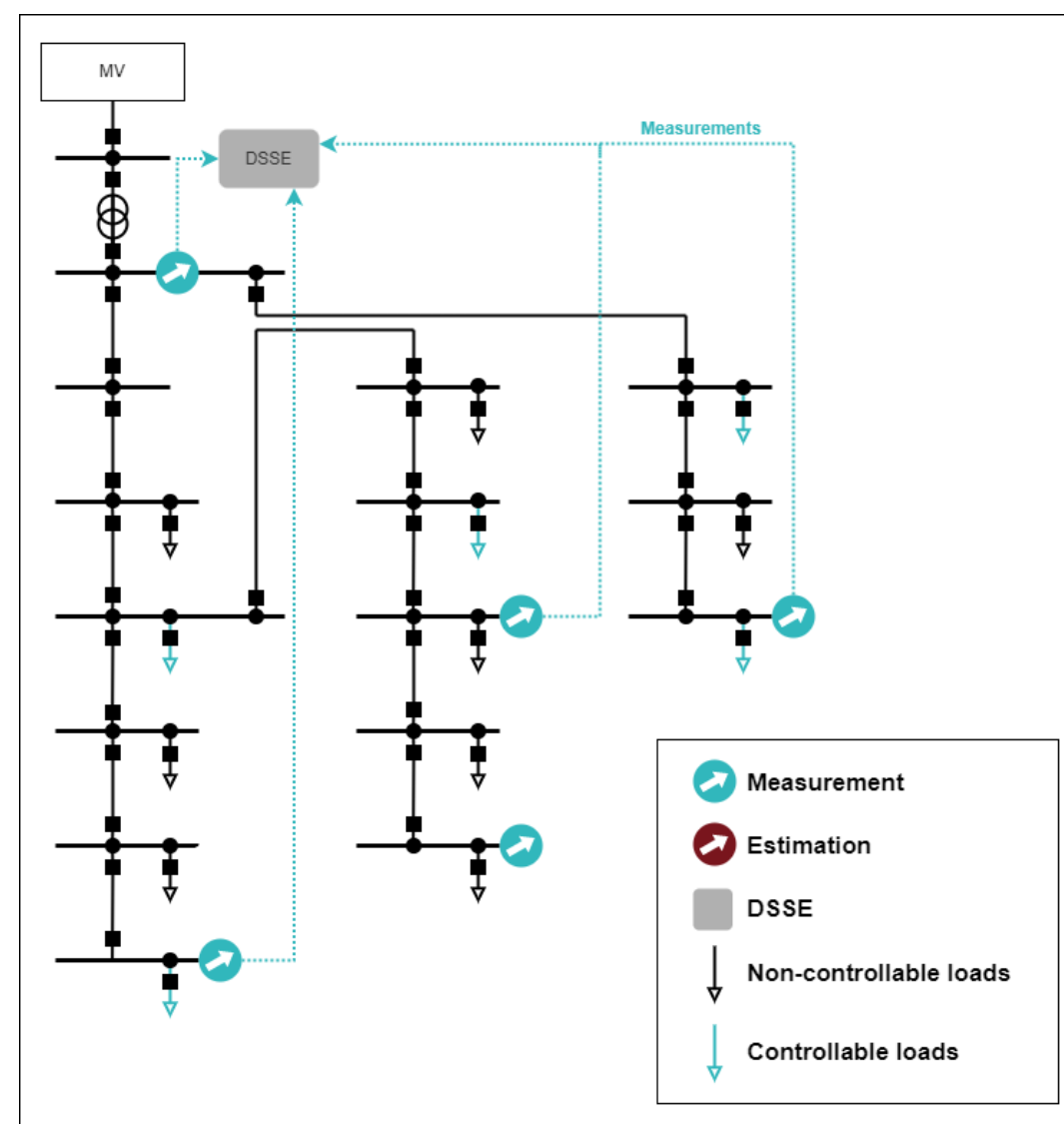
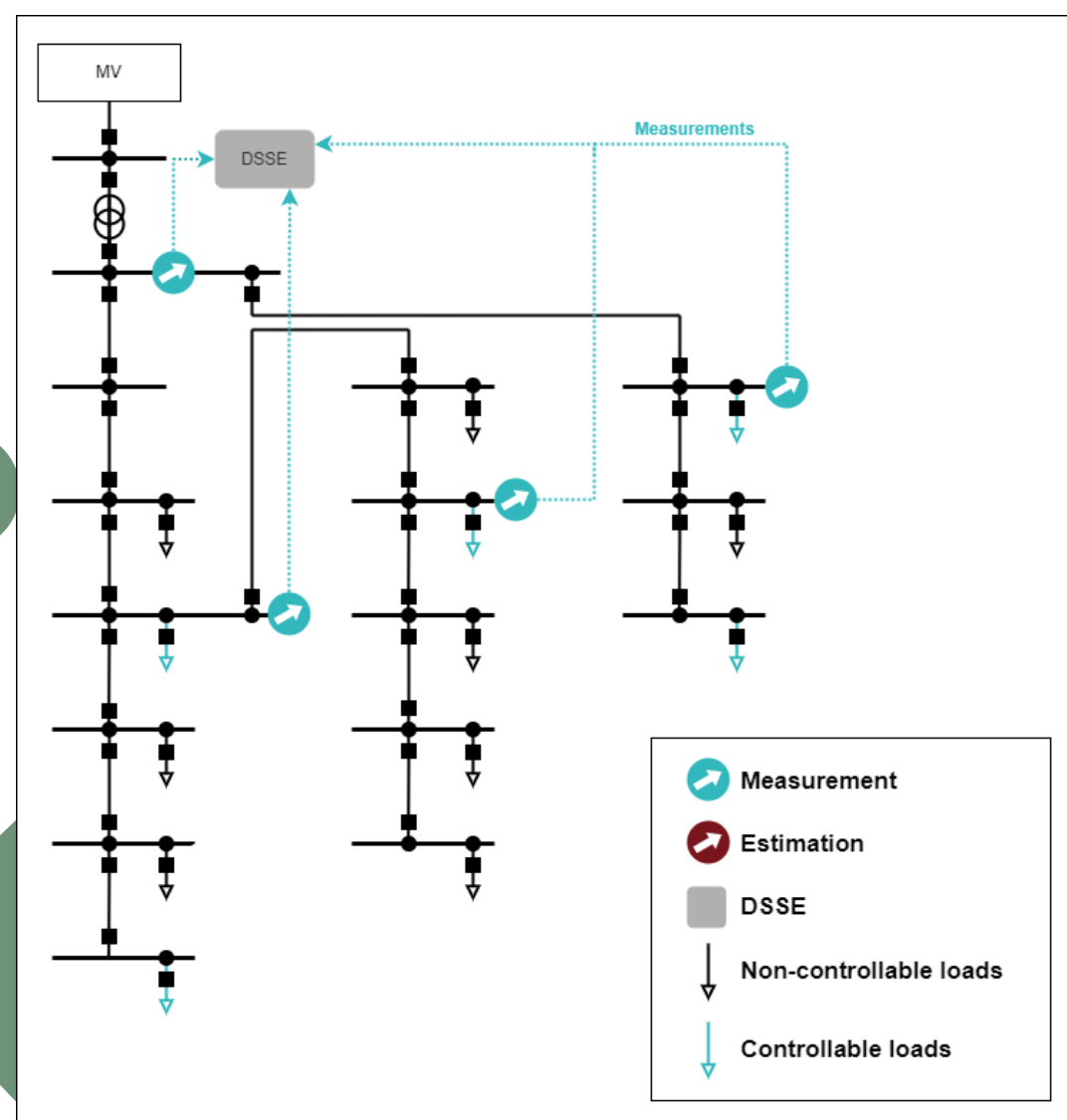
**Grid: (Close to) Real-time measurement & communication**  
 → Location?  
 → Quantity?

**Customer: (Close to) Real-time measurement & communication**

1. Grid support
2. Self-consumption optimization
3. Energy sharing



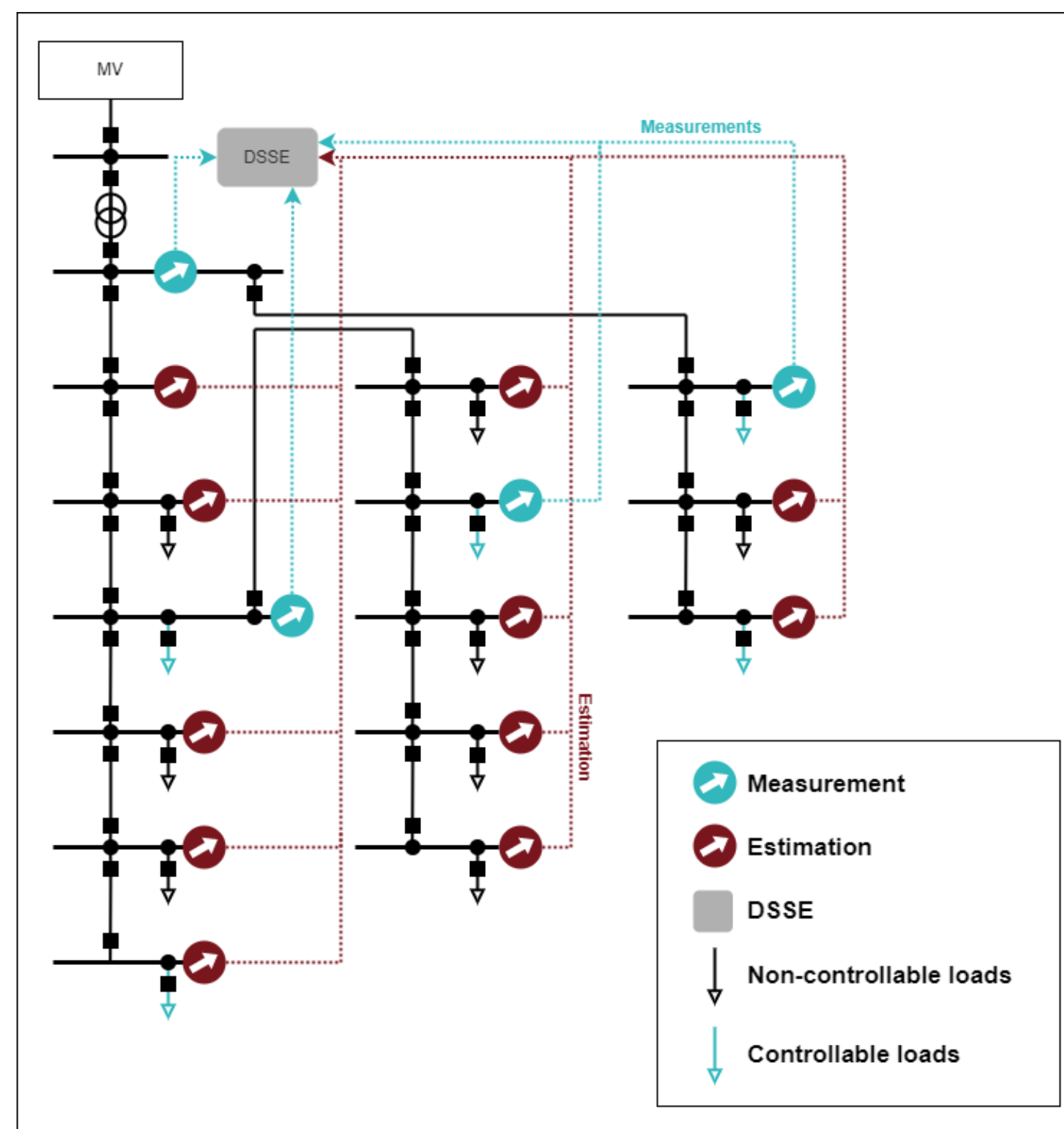
# Sensor Placement



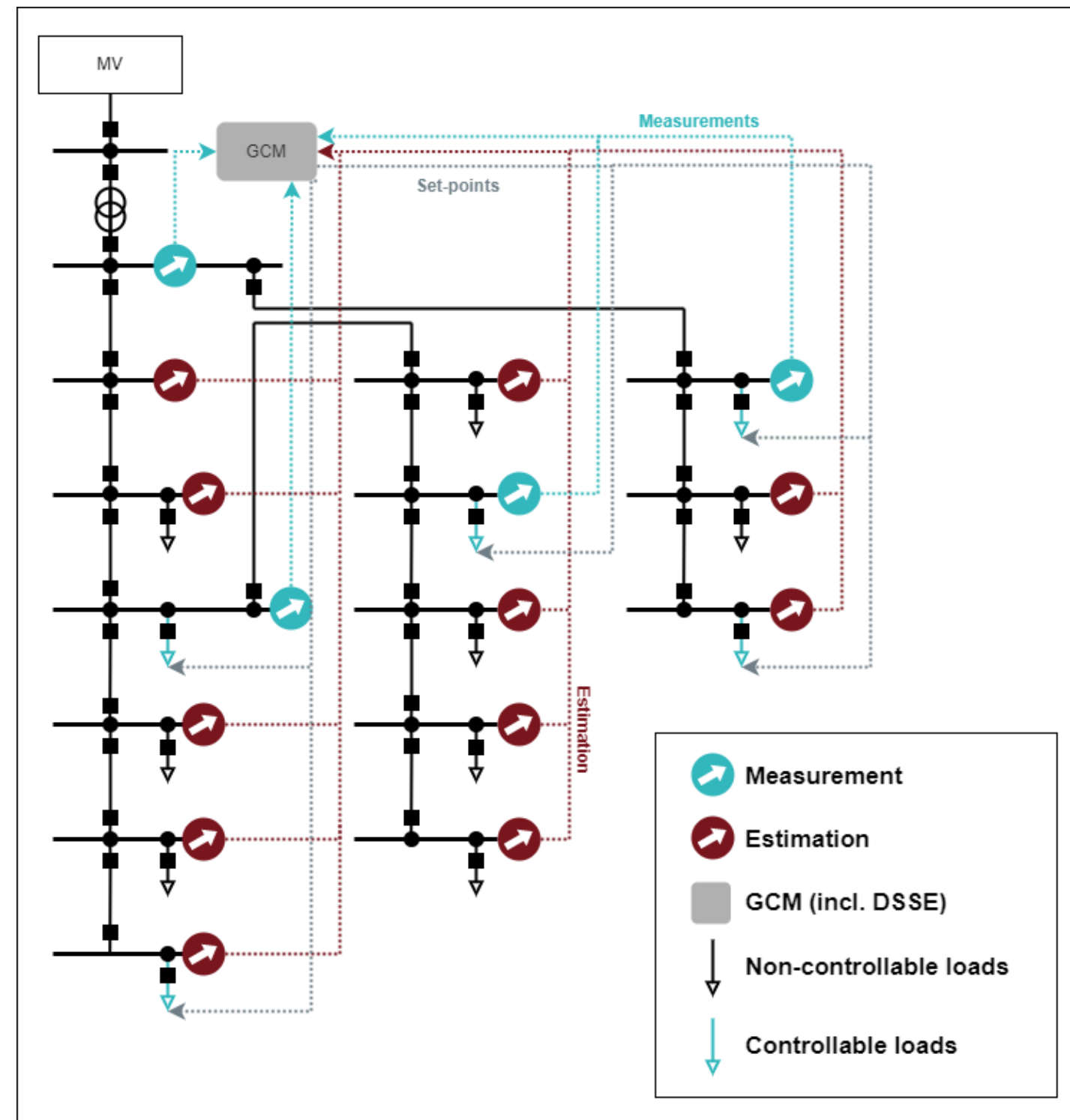
Visit us @ CIRED 2024 Workshop in Vienna:

David Fellner, Mark Stefan, Bharath-Varsh Rao, Sarah Reisenbauer, Maria Aigner, and Gregor Taljan:  
**„PARMENIDES – Ideal Voltage Sensory Placement for Battery Storage Operation Optimization“**

# Sensor Placement

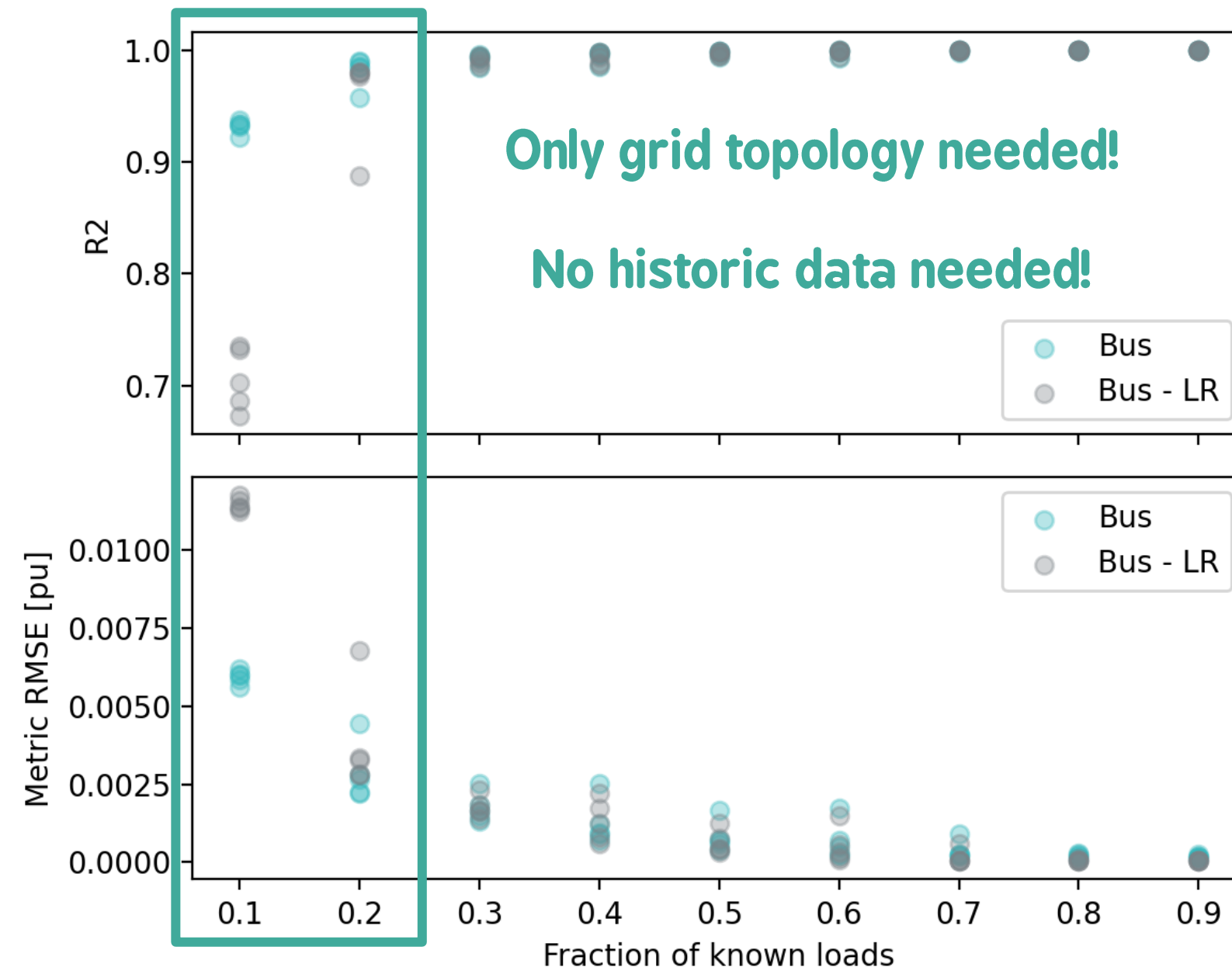


# Sensor Placement



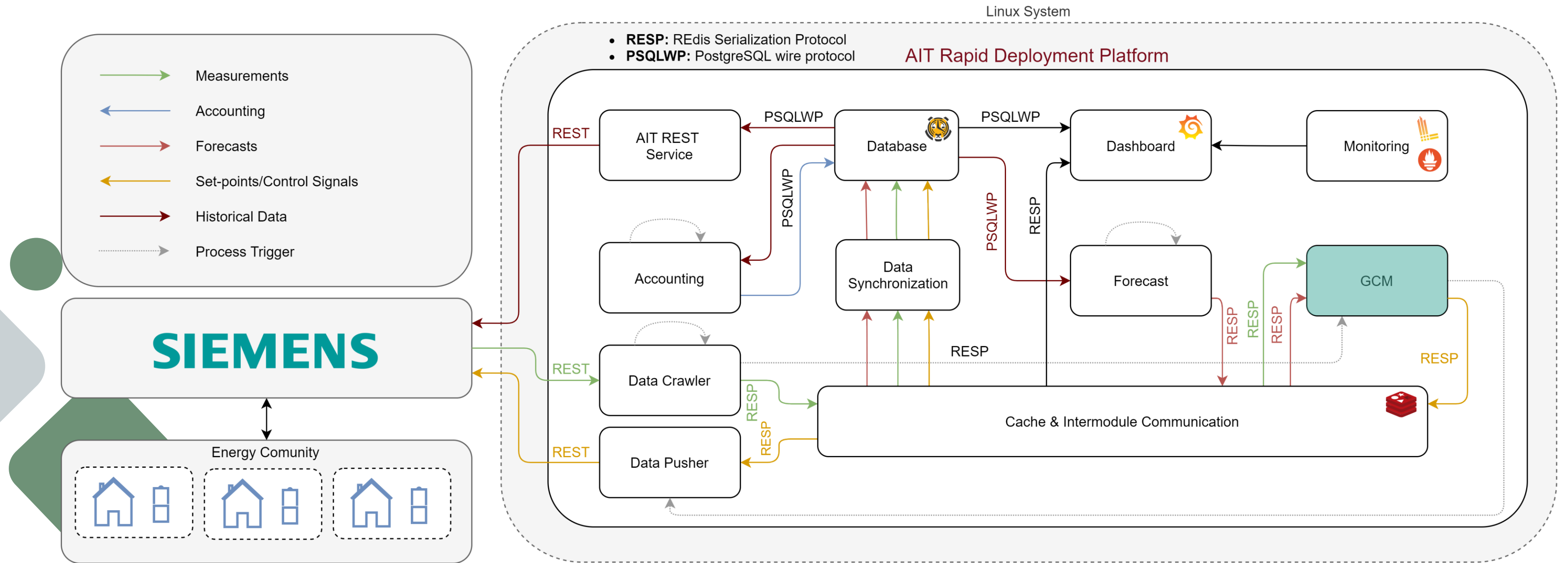
# Sensor Placement

LR - R2 and RMSE [pu] vs. fraction of known loads for grid06

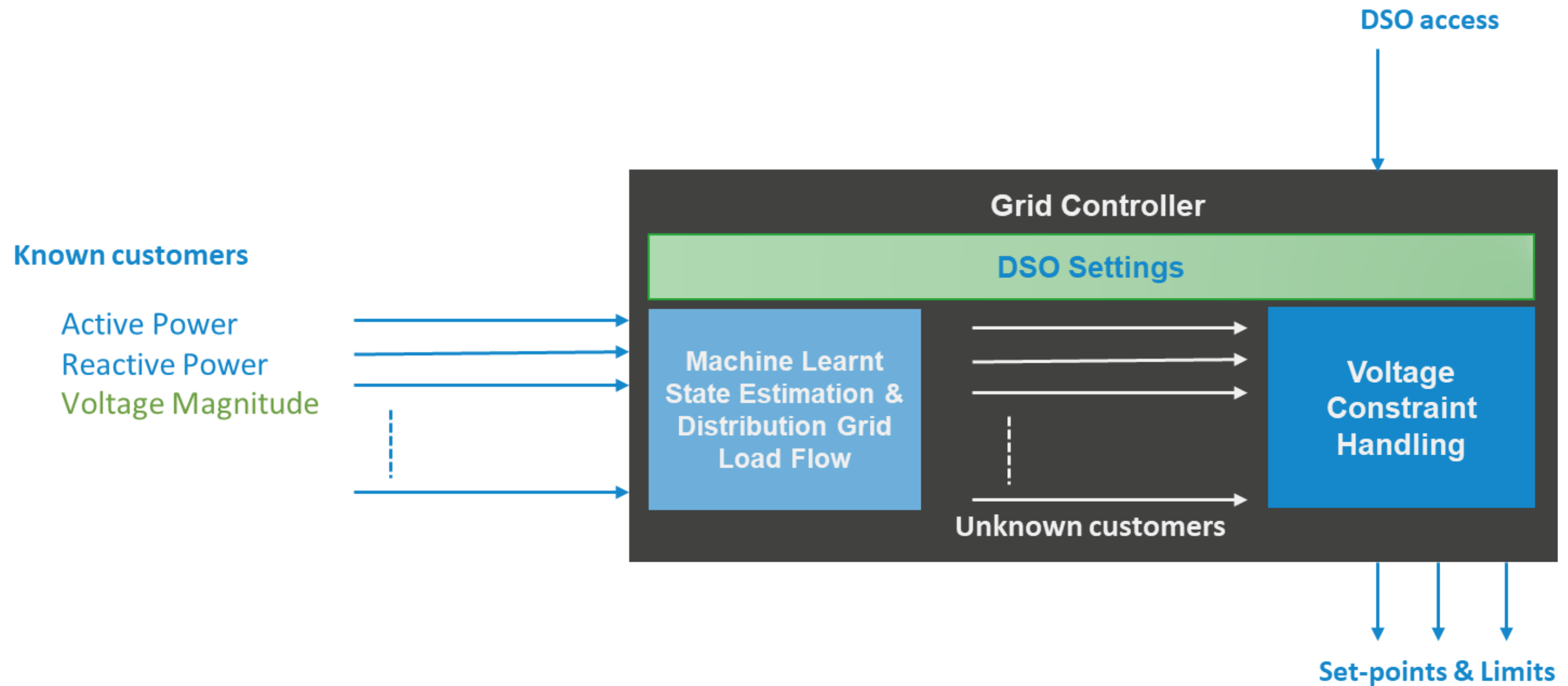




# AIT Rapid Deployment Platform



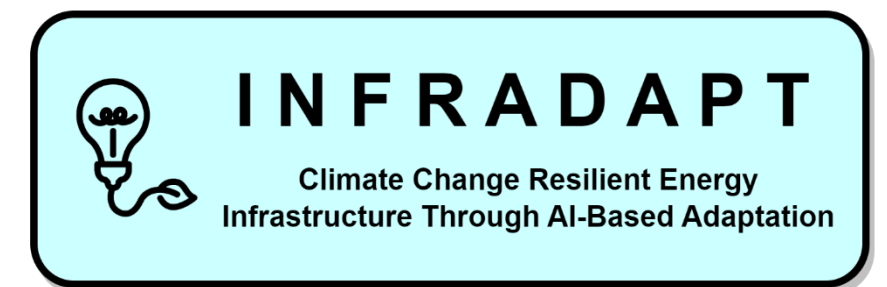
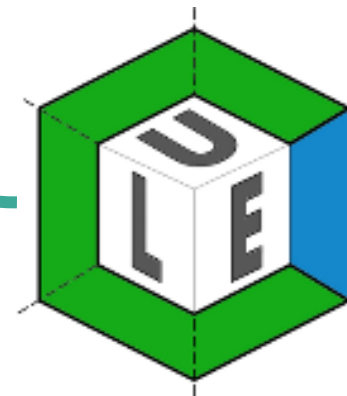
# Grid Capacity Management



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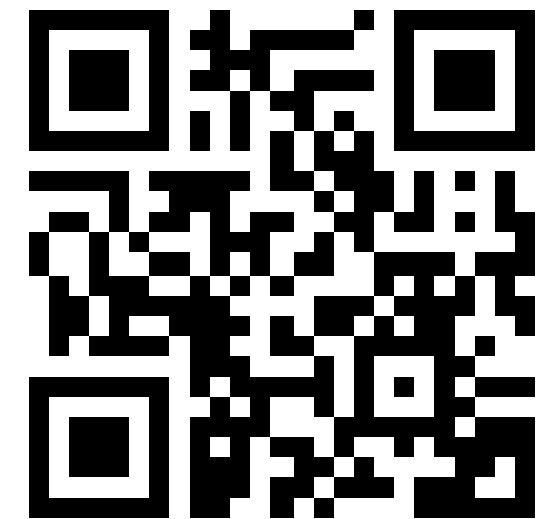


**BLOCKCHAIN**  
**GRID**





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# THANK YOU



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