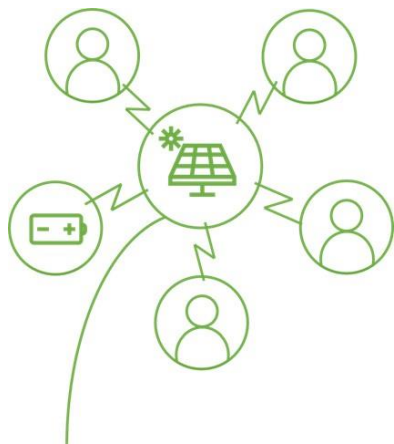


## ASPECDS

# ASsessment of The Potentials of Energy Communities for Expanding Renewable-based Electricity Generation In Distribution Systems



## New Kids on the Block ENLIT Europe 2023

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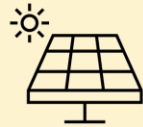
Budapest University of Technology  
and Economics, Budapest, Hungary

[smartpower.bme.hu](https://smartpower.bme.hu)

[zerocarbonhub.bme.hu](https://zerocarbonhub.bme.hu)

Smart Power Lab  
Zero Carbon Hub

# What are the **benefits** that Energy Communities can realize for the **operation of distribution systems**?



Increased renewable hosting capacity



Faster permission process



Mitigation of voltage problems



Postponement of investments



Decreasing curtailed energy and losses



Increased local consumption

# Means to achieve these benefits:

## **Community Coordination**



Advanced  
control of ESS



Reactive  
power  
control, DSM



Central PV  
and ESS at  
ideal  
locations



Distributed  
PV and ESS at  
ideal  
locations

# Assessment of the proposed methods vs. traditional grid reinforcement options

- > Detailed network simulations
- > Real or benchmark grid topologies, consumption and production data
- > Variations in asset penetrations
  - > PV, EV, heat pumps, electric storage water heaters
- > 15-min resolution, 1 weekday and 1 weekend day, each month for 1 year

