

Optimization of Battery Energy Storage Systems (BESS) for Multi-Market Participation

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Introduction

- EC currently encourages 1) the increase of efficiency, flexibility, safety, and power quality in distribution grids and 2) to fully exploit potential advantages from RES, DG, DR, and Energy Storage Systems
- Stationary and mobile BESS play a significant role in modern energy systems
- Multi-objective operation of distributed BESS could lead to lower socio-economic costs, but might also cause conflicts of interest

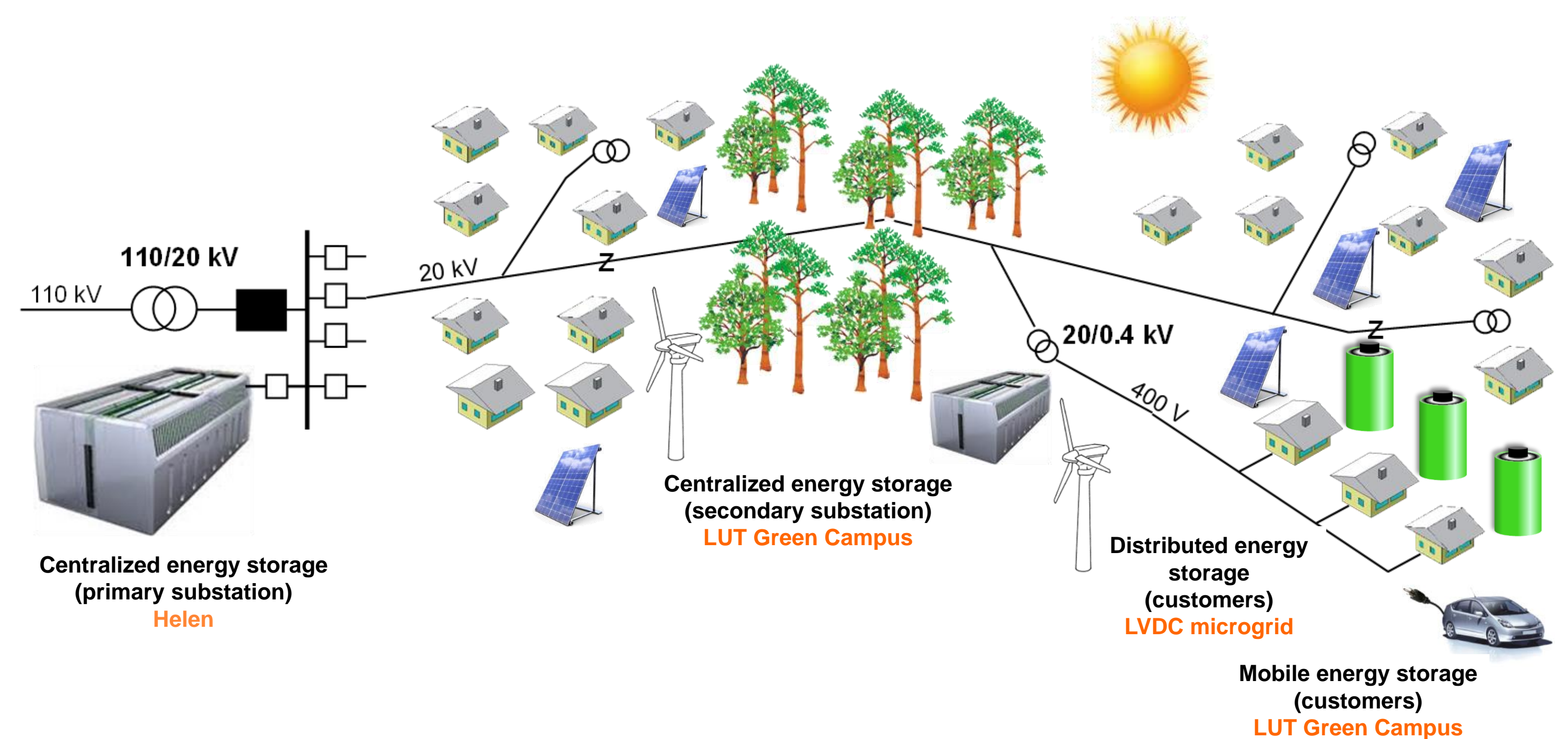


Figure 2. Interactions between existing BESS pilot sites.

Objectives

- Identify market needs/potential of BESS
- Multi-use of BESS in various applications
- Optimal combined management of distributed BESS and definition of good practices
- Impacts of BESS use in energy system



Figure 3. Characteristics of BESS in each test site.

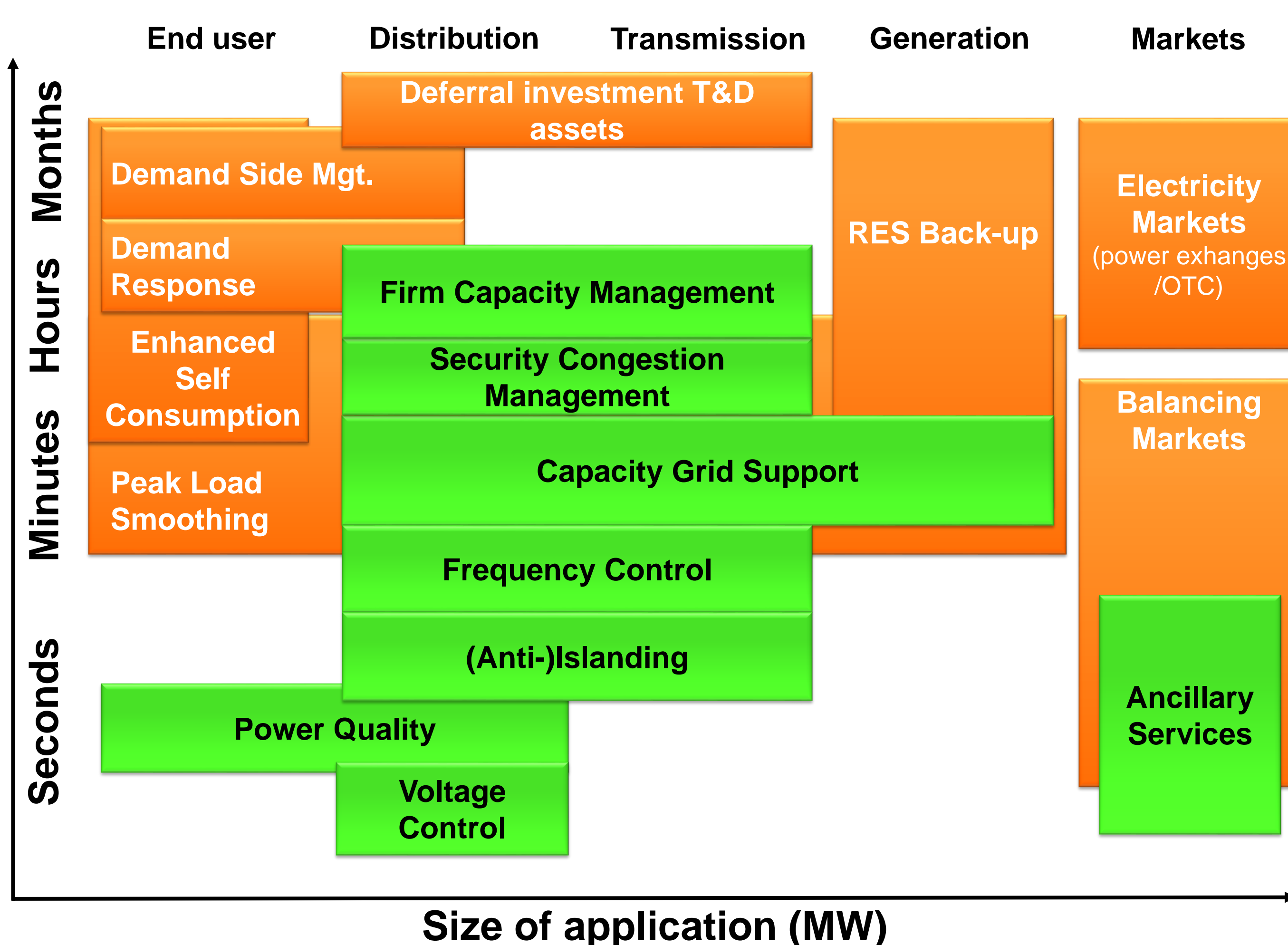


Figure 1. BESS market applications.

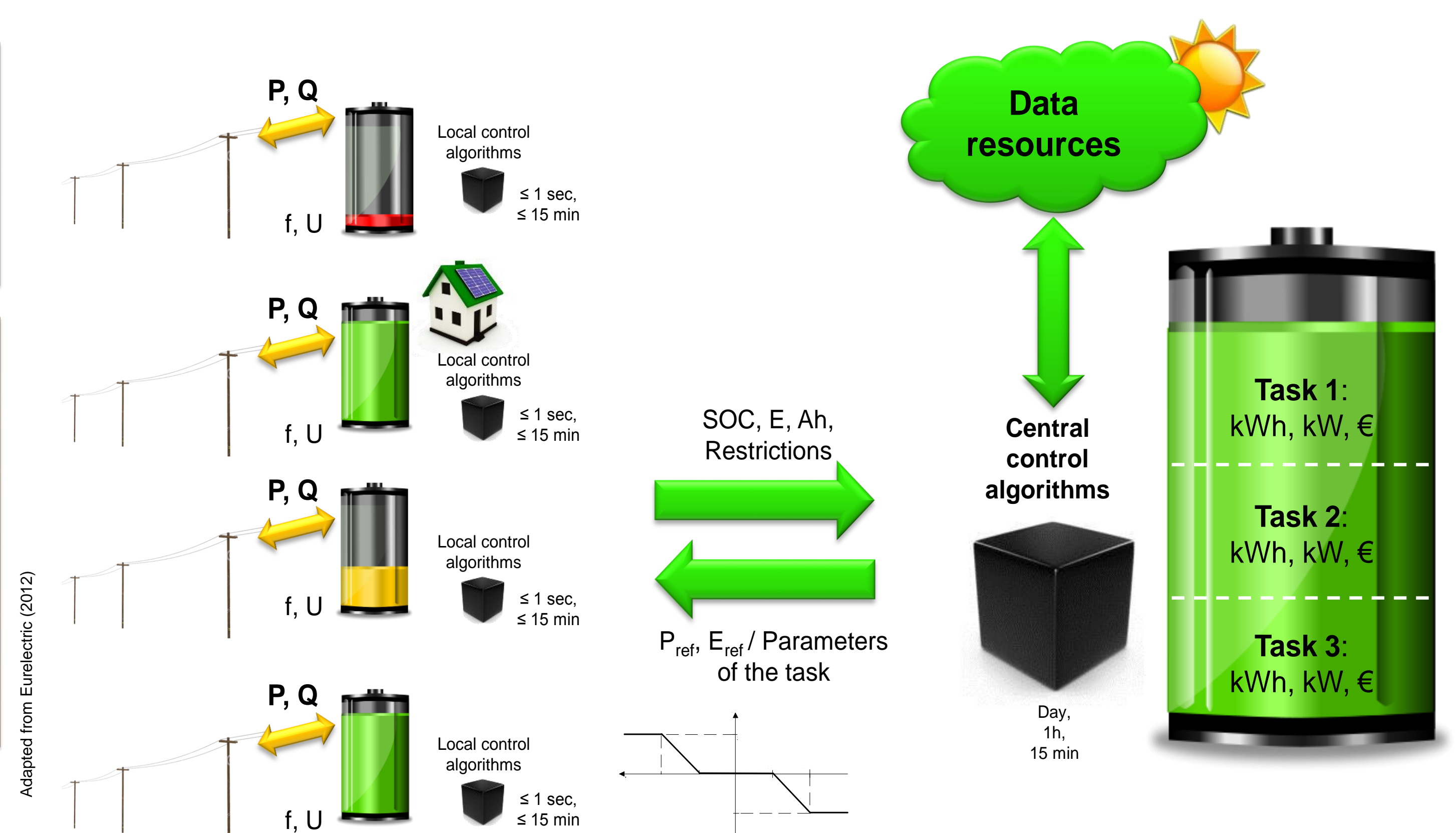
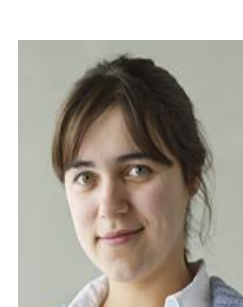


Figure 4. BESS multi-objective control concept.

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