

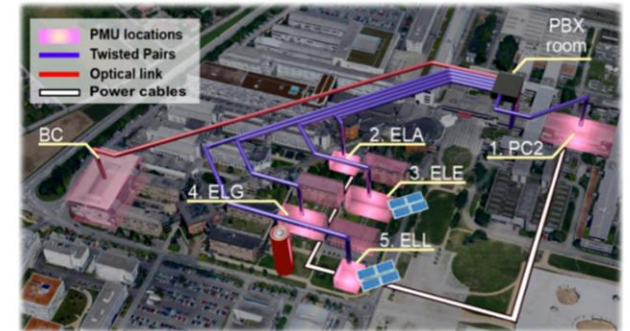
HYPERRIDE – Hybrid Provision of Energy based on Reliability and Resiliency via Integration of DC Equipment

Project Overview



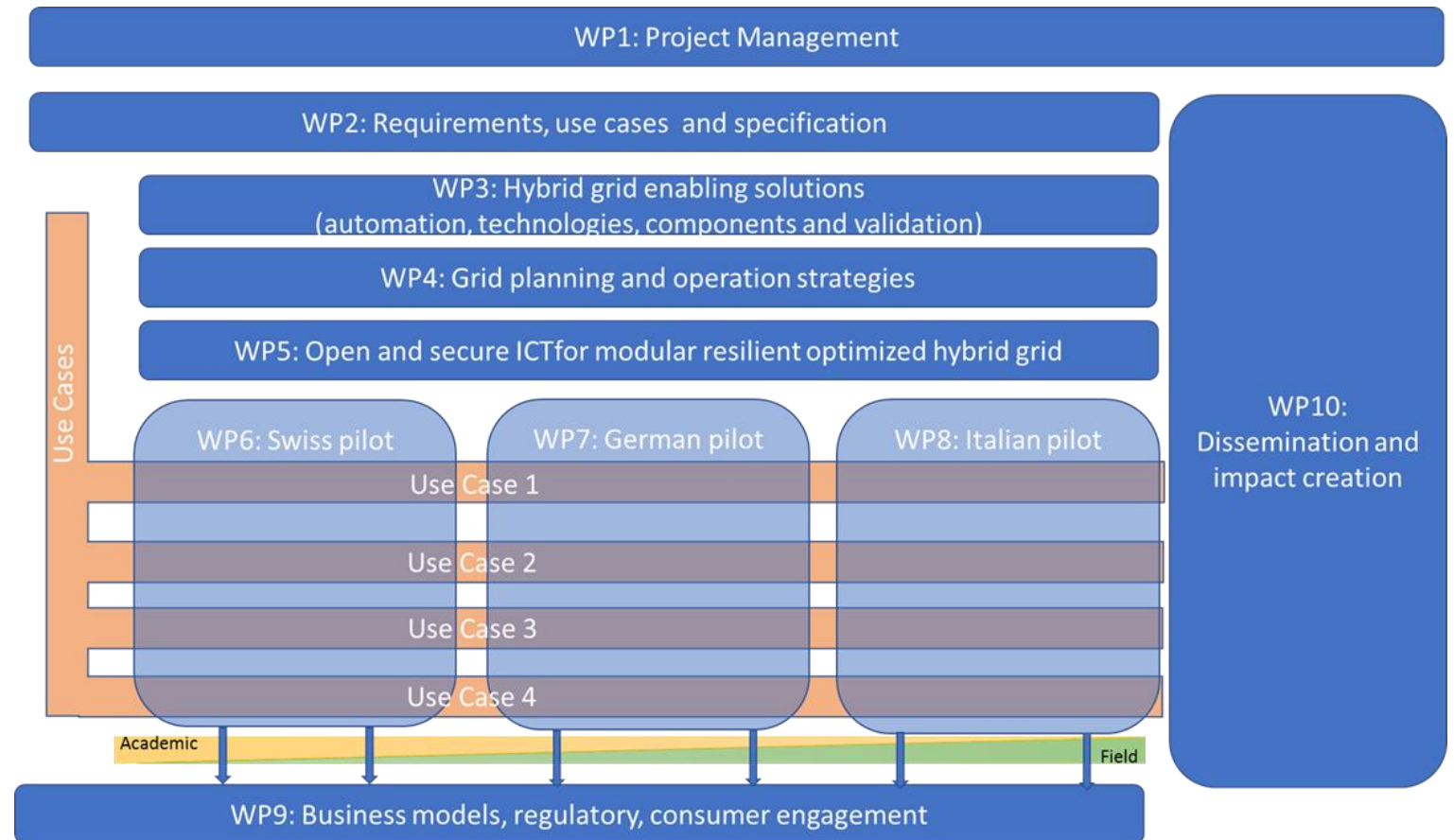
Key Facts

- Demonstrate MV - LV DC - AC/DC hybrid grids (micro/nano-grids) on TRL range 5-8
- Modular grid planning/development, firewall effect against faults or cyberattacks and accommodation of higher shares of renewables in a DC-based system (interconnected/isolated mode to/from power grid)
- H2020 Call “LC-SC3-ES-10-2020”, Innovation Action (IA), 4 years
- 7 Mio Euro funding (900 person months)
- 10 partners from 6 European countries, BRIDGE initiative
- Provision of 3 (virtually linked) demonstration sites in 3 different countries at EPFL, RWTH Aachen and ASM TERNI



Overview of Activities

- Coordination (WP 1)
- Preparation (WP 2-5)
- Execution Pilots (WP 6-8)
- Business models, regulatory consumer engagement (WP 9)
- Accompanying: Dissemination and impact creation (WP 10)



Expected Results and Impact

- Holistic approach unleash full potential of hybrid AC-DC infrastructure (TRLs at demo-sites)
- Provision of guidelines for planning and operation of hybrid structures (grid planning and component sizing, tests and validation for DC components & systems)
- Automation solutions of AC-DC infrastructure (open, interoperable ICT platform)
- Component solutions will showcase benefits of hybrid infrastructure (e.g. MVDC breakers and sensors, DC measurement unit)
- Safety and security solutions will ensure a resilient energy supply (protection coordination, stability assessment, automatic grid reconfiguration in case of cyberattacks)
- Provide feedback to enabling technologies based on demonstration experience
- Enable business models along the value chain to foster market uptake of AC-DC installations



Challenges and Risks

Challenges for DC – hybrid AC/DC distribution: PE converters based, low-inertia (DC) grids

- *Functional risks:* no consensus on technical interoperability issues
- *Technical risks:* technological results not provided in time, technology does not follow certain standards for DSO grid integration, protection coordination and power quality challenges by DC grid integration in existing AC grid, lack of operational experience
- *Business risks:* missed important business-related points of view, immature or poor business planning, technology is not accepted by industry



→ Continuous risk-mitigation measures necessary!



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