

Mission Project: Use Cases and Services of the Smart Energy Microgrid Platform (SEMP)

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The use cases help identify realistic operational scenarios, assess system performance and robustness, and ensure numerical simulations accurately reflect real behavior. The Smart Energy Microgrid Platform (SEMP), the control center of the ENEA demonstrator, developed under MISSION project, collects data from experimental sub-networks, optimizes strategies, and transmits aggregate configurations to enhance energy management. The development methodology for MISSION's use cases includes definition, validation, revision, and final selection, ensuring accuracy and alignment with project goals. Five main use cases were proposed: minimizing fossil fuel energy, investigating hydrogen's impact on environmental performance, maximizing local energy community profits, maximizing energy savings, and testing flexibility resource behavior. Each of these five use cases includes two or more sub-cases depending on the involved infrastructure.