



MERUS POWER

Energy Storage System

# Merus™ ESS (1.6 MW / 1.3 MWh) in Energy Society 20 kV microgrid and national frequency regulation reserve markets

## Operation as a part of microgrid

A 1.6 MW / 1.3 MWh 20 kV Li – ion battery energy storage system provides a buffer for excess solar production for later use and enables a black start capability for gas generators. The energy storage can provide uninterrupted power supply during regional grid failure and guarantees uninterrupted electrical function to the Energy Society. The energy storage enhances the power quality and minimizes losses in different electrical components such as transformers, cables etc. It also extends the lifetime of different electrical devices and components.

The energy storage is participating to the well-paid national frequency regulation reserve markets (FCR) and also bridges the gas generators to the markets.

## Scope of supply

Full turn-key contractor's responsibility including manufacturing, installation and commissioning works.

Delivery of Power Conversion System (PCS) and battery system, all installed inside the existing buildings. An Energy Management System (EMS) and it's integration to external Energy Trading System. PCS's integration to Battery Management System. The turnkey contractor's project responsibilities.

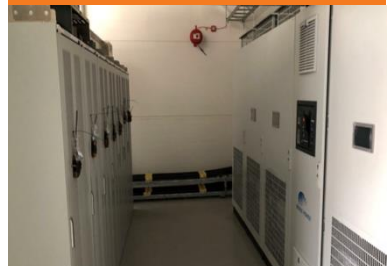
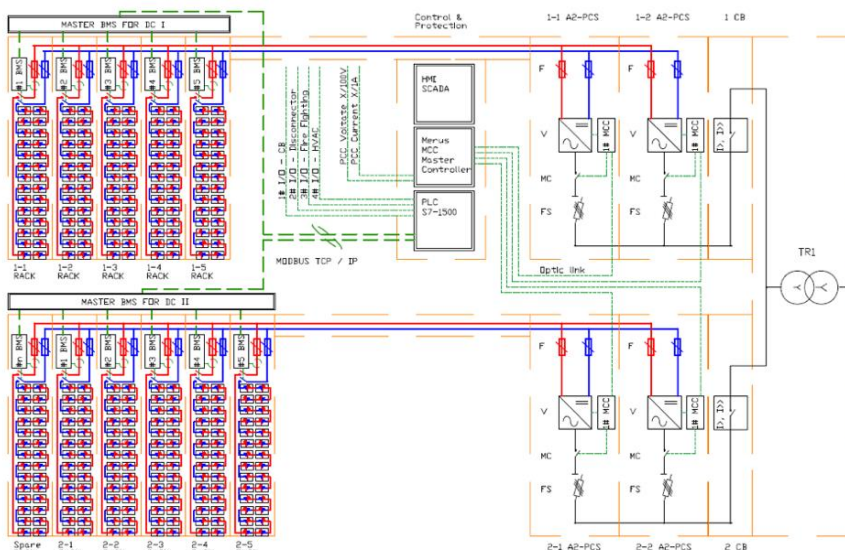
Energy storage service contract with annual maintenance and spare parts management contract. Remote monitoring and operation support with performance and energy storage condition reports.



**Application:**  
Supporting energy society 20/0.4 kV microgrid environment during on-grid and off-grid operation. Enables black start ability to gas generators and uninterrupted power supply to the microgrid. The microgrid is part of the national frequency markets.

**Location:**  
Finland, Lempäälä

**Customer Background:**  
The customer is an Energy Society for multiple industrial customers



- Customer Benefits:**
- National frequency markets
  - Uninterrupted power supply
  - Solar power optimization
  - Off-grid capability
  - Black start for gas generators
  - Improved power quality

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