

STONE EDGE FARM MicroGrid Technical Overview

Sonoma, California, USA

Facility/Load Type: Agricultural, Residential

Project Timeline: July 2013-June 2018

Total Capacity: 785kW

Generation Types:

Fuel Cell Hives

Hydrogen Electrolyzer/Fueling Station

Iron Flow Cell Battery

Lithium Cobalt Ion Battery

Lithium Iron Phosphate Batteries

Microturbine

Sodium Ion Battery

Zinc Bromide Flow Cell Battery

Energy Storage Capacity and Duration:

Aquion Sodium Ion Battery: 28kW/380kWh

ESS Iron Flow Cell Battery: 10kW/65kWh

Redflow Zinc Bromide Flow Cell Battery (2): 10kW/20kWh

SimpliPhi Lithium Ferro Phosphate Battery (7): 23.8kW/45kWh

Sony Lithium Iron Phosphate Battery (8): 2.4kW/9.6kWh

Tesla Lithium Cobalt Ion Battery (80): 250kW/475kWh

TOTAL: 324kW/995kWh

Current Generation Capacity (not including energy storage)

Solar PV: 368kW

Capstone Microturbine: 65kW

ReliOn Fuel Cell Hive: 28kW (kWh based on quantity of hydrogen stored)

TOTAL: 461kW

Programmable Loads:

Millenium Reign Hydrogen Electrolyzer: -400kW

Planned Additional Generation Capacity:

Solar PV: 300KW

Principal Engineer: Wooster Energy Engineering

Vendor Partners:

Capstone Turbine Corporation

DC Systems

Dersch Design & Engineering, Inc.

Eaton Corporation

Emerson Electric

Energy Storage Systems, Inc.

Enphase Energy

Heila IQ

Independent Electric Supply, Inc.

Millenium Reign Energy, LLC

Pacific Gas & Electric

PlugPower, Inc.

Redflow Advanced Energy Storage

SimpliPhi Power

Smart Geotech, Inc.

Sonoma Clean Power

Sony Corporation

Tesla Motors