



## Microgrid Energy Management Solution

Maximize Resiliency, Reliability & Energy Efficiency



The unified **electrical** digital twin platform



Microgrid Management System

Edge Control Solution for Microgrids

etap nanoGrid EMS (nEMS) is a multi-site remote management solution, interfacing with IoT devices to monitor, automate, control, optimize, determine health indices, and generate optimal maintenance schedules while minimizing OPEX.

- ✓ Remote management of decentralized nanogrids
- ✓ Reduce power consumption with automated, intelligent controls
- ✓ Reduce maintenance & replacement service visits
- ✓ Extend equipment lifetime by maintaining stable environmental conditions
- ✓ Improve reliability & operation of backup power
- ✓ Minimize transportation & onsite fuel losses
- ✓ Consolidate data from multiple sites via vendor agnostic platform
- ✓ Immediate return-on-investment through easy configuration & quick deployment

## Automatic Islanding Detection & Nanogrid Control

Effective operation and control are determined based on the priority of energy generation resources. Utilizing renewable energy resources first, followed by energy storage, ensuring effective energy management for a stable and reliable power system at the lowest cost possible.

## Equipment Condition Monitoring & Health Estimation

nEMS is designed for quick time-to-market for preventive maintenance initiatives. Data is collected across multiple sites from similar devices to learn equipment behavior patterns and identify performance deterioration. nEMS applies machine learning and big data mining algorithms for predicting equipment health and schedule maintenance under degraded conditions.

## IoT Aggregation & Integration Platform

The platform utilizes distributed architecture for open scalability by connecting multitudes of data acquisition devices, storage, processing, advanced analytics tools, visualization interfaces, and enterprise-level applications integrated in a unified multi-site solution.

## Energy Accounting

Energy Accounting software provides energy usage analysis and cost allocation for individual generation units, areas, and the entire system. nEMS can track and create energy billing reports based on user-definable energy cost functions and energy tariffs.

