DEMAND energy
Take charge.

DEN.OS™

Distributed Energy Network Optimization System (DEN.OS)

Demand Energy's **DEN.OS**™ is a turn-key energy management platform that integrates the intelligence, big data analytics and network architecture required to maximize the benefits of distributed energy storage. As a cloud-based platform, DEN.OS centralizes and tightly integrates all of the functions needed to aggregate and manage distributed energy resources independently of their location, capacity or ownership.

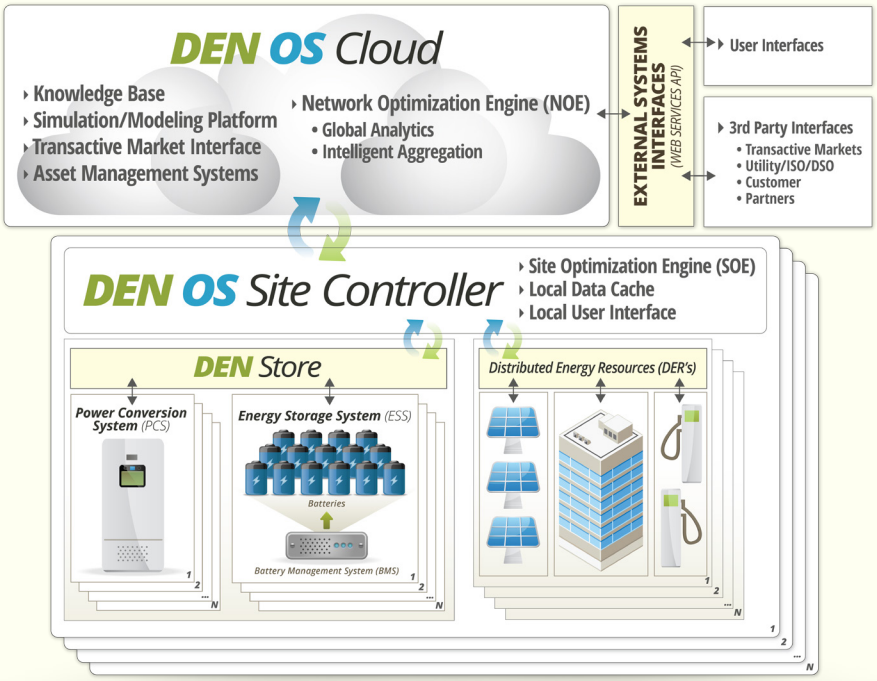
The DEN.OS goes well beyond the basic requirements of managing energy storage by integrating support for site management systems, energy markets, metering systems, and other Distributed Energy Resources (DERs). Sophisticated analytics and automated decision-making are applied in real-time to the large-scale data store that continuously tracks energy demand, system status and market information to minimize costs without compromising power quality or reliability.

The DEN.OS continuously reacts to energy market rate structures, storing energy when time-of-use rates are low or excess renewables production is available; and generating electricity during peak periods when power is expensive and to offset costly demand charges and/or reduce load during a demand response event.

DEN.OS also makes it easier to integrate both large and small-scale renewable energy generation, in a microgrid or as a virtual power plant, and provides a dependable source of back-up power during a grid outage, complete with "dark start" and support for critical loads.

DEN OS™

Distributed Energy Network Optimization System



Cloud-Based Software Platform

DEN.OS is a next-generation energy management and big data analytics platform that applies unprecedented levels of digital intelligence to distributed energy resource optimization. Equipped with an unique economic optimization engine and real-time control algorithms with dynamic learning and corrective capabilities, DEN.OS communicates with both building and grid management systems to automate and optimize decisions about energy utilization. System operation is based on site specific utility rate schedules and real-time energy demand at the site level, and can optionally be configured to react to local grid conditions to help regulate load.

DEN.OS software operates at two distinct levels within the Network Optimization System:

DEN.Cloud™ is a cloud-based service that connects and aggregates distributed energy storage/generation systems. From the browser-based dashboard, DEN.OS gives facility managers the means to monitor and control electricity usage in real-time at a single or multiple facilities.

DEN.Site™ is the distributed control system used to control the site DER assets, including the integrated hardware platform DEN.Site Controller to manage applicaton specific DER optimization. DEN.Site normally operates under control of the DEN.OS Cloud service but will operate autonomously if a connection to the DEN.Cloud is not available, including offering a local UI for backup power or microgrid applications.

Integrated Hardware Platform

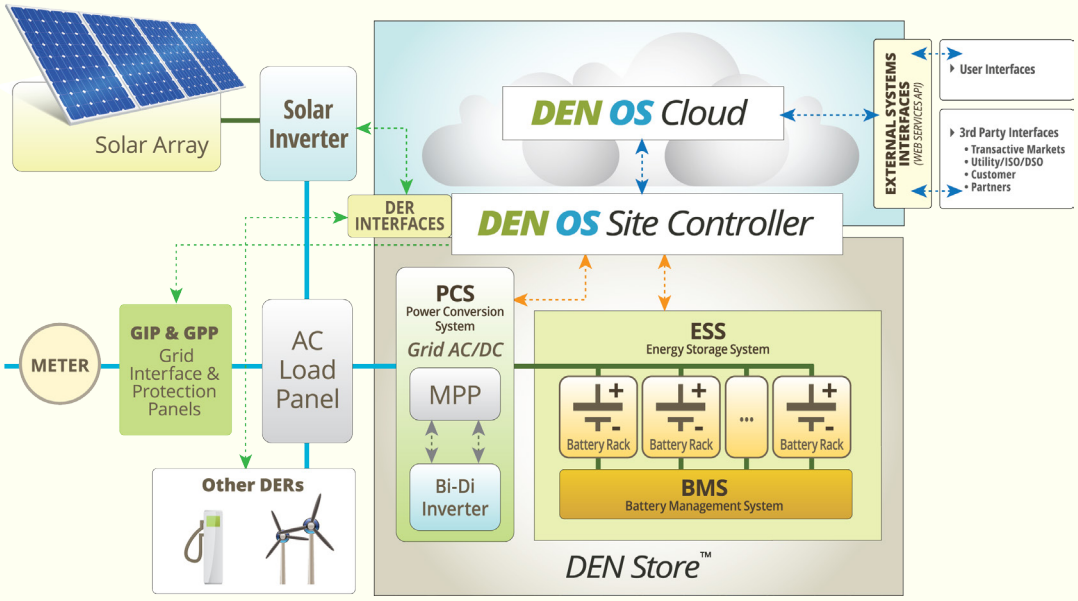
DEN.Store utilizes a modular and scalable energy storage and power conversion system that integrates a range of advanced battery technologies and battery management. By combining a state-of-the-art and highly flexible power conversion system and energy storage solution in a single system, DEN.Store is able to charge, retain and generate energy to optimize usage scenarios and maximize cost savings in a variety of use cases and under any utility rate structure.

The hardware platform incorporates two key elements:

Power Conversion System (PCS) consisting of an AC/DC and bi-directional, solid state power converter (charger and inverter). The PCS includes a Master Power Panel (MPP) to provide a central point for AC and DC power connections and includes a control panel and processor for running the energy management applications that optimize the operation via either a local user interface or communications with the DEN.Store system, console and/or third-party energy management system. The MPP integrates system wide control and safety circuits for the entire integrated DEN.Store system.

Energy Storage System (ESS) consisting of rechargeable batteries in either an open or enclosed rack, and a Battery Management System (BMS) to monitor battery cell health and charge levels, temperature, voltage, and string current and voltage. The enclosed rack system can be configured with cooling & heating systems for installations where temperature is not controlled. Battery agnostic architecture allows for seamless integration of lithium, flow or other battery chemistries.

DEN Store™ One Line Diagram



DEN.Services

SUBSCRIPTION SERVICES

DEN.OS Software Subscription

DEN.OS is a distributed operating platform that provides the operational intelligence of the building integrated energy management system. It combines local and cloud based data storage enabling user control of the system. From a broswer-based dashboard on your computer, giving users the ability to visualize, track, and regulate DEN.Store operations. DEN.Site provides local software control, enabling real-time monitoring, control and operations of distributed energy systems.

Network Operations Subscription

We make building energy management simple, because we manage it for you. Demand Energy's network management team monitors and tracks energy usage, utilizing energy storage to maximize electricity savings. This subscription service includes continuous monitoring, & proactive optimization of the system to meet operational and economic objectives. It combines the best of adaptive and dynamic software capabilities with system experts to ensure continuity of service.

Technical Support & System Maintenance Subscriptions

Customer support programs are customizable and quoted based on system configurations. Programs include resolution of technical inquiries, live and on-line system analysis, system maintenance, and field services.

CONSULTING & SYSTEM INTEGRATION SERVICES

Consulting Services

Demand Energy offers comprehensive consulting services to help you define effective energy solutions for your specific requirements. From energy audits, to advice on how to best retrofit a building for DEN.Store, we offer options that include solution design, integration architecture, system installation, and program management to meet your energy management goals.

Implementation & Integration Services

Demand Energy will assist with the implementation, turn-up and commissioning of the DEN.OS system. An unique feature of the DEN.OS system is its ability to integrate into a building's energy ecosphere, allowing comprehensive energy systems management from the browser-based dashboard. Examples of 3rd party systems integration include interfacing the DEN.OS with building management and energy monitoring devices, EV charging, demand management, and other distributed generation, like solar, fuels cells, CHP and wind.

What To Expect

Ordering the DEN.OS system involves these activities:

STEP 1 - Consulting Services

- Energy consulting services provide analysis of your site to outline location, site modifications, installations needs, and other technical requirements to prepare for DEN.OS installation.
- Load assessment and operational modeling of system. Establishes baseline load assessment, needs analysis, site planning, and DEN.Store system configuration determination for optimal site integration.
- Customized consulting services are available to help you improve and enhance energy management, and to maximize energy savings.

STEP 2 - Purchase of DEN.OS system

- DEN.Store deployed at scale to meet load requirements.
- DEN.OS & Network Operation Subscriptions for system management & control and optimized system operations.
- Integration Services — service to connect the DEN.OS system with site energy ecosphere.

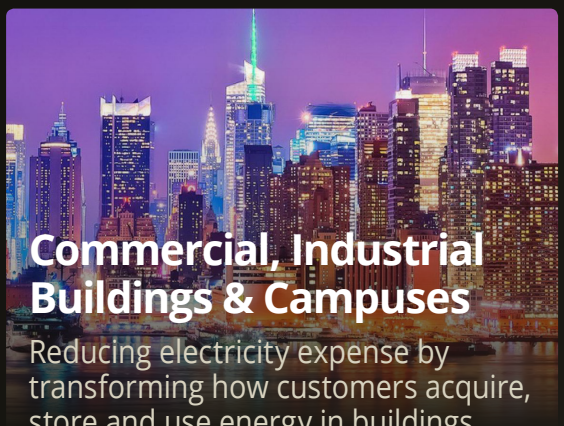
STEP 3 - Implementation & Integration Services

- Service to implement, turn-up, commission and integrate the DEN.OS system with site energy ecosphere.

STEP 4 - Support & Maintenance

- Customized and expandable to meet your specific operational needs in site resource management, back office integration, monitoring, field services and technical support.

Energy Storage Applications



Commercial, Industrial Buildings & Campuses

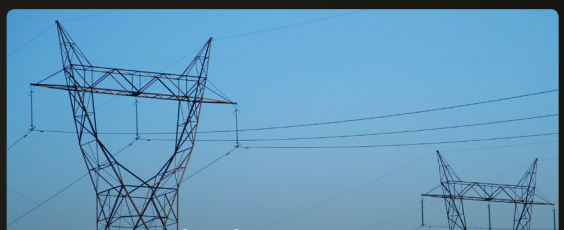
Reducing electricity expense by transforming how customers acquire, store and use energy in buildings.

Integrating Solar & Wind Generation

Improve and transform the economics of renewable energy while improving grid stability.

Microgrids & Virtual Power Plants

Adding flexible capacity to the energy supply mix with turn-key distributed energy storage solutions.



Transmission & Distribution Utilities

Energy storage solutions providing grid optimization and ancillary services in a battery agnostic solution.

Contact a sales representative at **844.857.2871** for more information or email **sales@demand-energy.com**

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