

The logo for Scale Microgrid Solutions features the word "SCALE" in a large, green, sans-serif font. Above the letter "A" is a stylized green icon consisting of a horizontal line with a small circle in the center, flanked by two short horizontal bars. Below "SCALE" is the phrase "MICROGRID SOLUTIONS" in a smaller, grey, sans-serif font.

SCALE

MICROGRID SOLUTIONS

A photograph of a large array of blue solar panels installed on a roof, viewed from a low angle looking up towards a cloudy sky. The panels are arranged in neat rows, and the perspective creates a strong sense of depth and scale.

ABOUT US

Scale Microgrid Solutions, LLC. (SMS), is a vertically integrated microgrid services provider focused on delivering cleaner, cheaper, and more reliable power to commercial and industrial energy customers throughout the United States and Canada. Our clean energy microgrids leverage a variety of cutting-edge on-site generation technologies including photovoltaic solar, battery energy storage, dispatchable generators, CHP, and grid-integrated controls to deliver an optimal value proposition for our clients. We retain the in-house capabilities needed to design, develop, deliver, finance, and service each of our systems, enabling us to provide our customers with a one-stop shop for all of their on-site power needs.

SMS is headquartered in Ridgewood, NJ with additional offices in New York, Colorado, and California.

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THE FUTURE OF ELECTRICITY



The US electric grid is facing unprecedented resiliency challenges stemming from increasingly frequent extreme weather events, aging infrastructure, and evolving cyber threats. For commercial and industrial facilities that require continuous power for operations, significant operational risks stem from this evolving landscape.

Microgrids incorporate a diverse portfolio of generation resources to allow facilities to operate both in parallel with the grid and in island mode (operating independently from the grid) during outages and disruptions. Which means customers can remain with power throughout events such as natural disasters. By utilizing and optimizing a suite of distributed generation resources, microgrids represent the most resilient, cost-effective, and sustainable energy option for many commercial and industrial customers in North America.

THE SMS APPROACH



SMS STRATEGIC PILLARS



A Productized Solution

A standardized technical solution with integrated natural gas, solar, batteries, and controls; the linchpins of the microgrid space



Vertically Integrated Process

A vertically integrated distributed energy company, aligning incentives across the value chain towards executing projects



Scalability as a Service

Provides design, finance, build, and O&M as a service to reduce complexity and costs for customers



VPP Portfolio

Asset aggregation unlocks VPP benefits, creating upside revenue for all



Energy Experts

A team of mission driven energy experts



VALUE PROPOSITION



We simplify

the process, making it easy for customers to move forward



We offer

customers 15-30% reduction in energy costs, 20-40% reduction in carbon footprint, and improved resiliency/built in emergency power

TECHNOLOGY

Solar PV



We work with the best local solar installation professionals to design, engineer, and construct custom rooftop, carport, and ground-mount solar arrays to meet the needs of your facility.

Battery Energy Storage System



Modular, scalable architecture with best-in-class power conversion and battery technologies.

Manufacturer	4 Standard Modules	125 kW (1, 2, or 4 hrs)
Schneider Electric		250 kW (1, 2, or 4 hrs)
Chemistry		500 kW (1, 2, or 4 hrs)
Li Ion - NMC		1000 kW (1, 2, or 4 hrs)

Dispatchable Generator



Manufacturer	7 Standard Modules	285 kW	1000 kW
Mitsubishi		380 kW	1200 kW
Scale Microgrid Solutions		610 kW	1500 kW
Fuel Options		815 kW	
NG, RNG, Propane			

Microgrid Controls and Monitoring



Manufacturer (s)	1 Common Platform	Communication Protocol
Schneider Electric		Native Open ADR 2.0
Scale Microgrid Solutions		Cyber Security Testing
		NIKTO, DIRBUSTER, SQLMAP

Energy Control Center



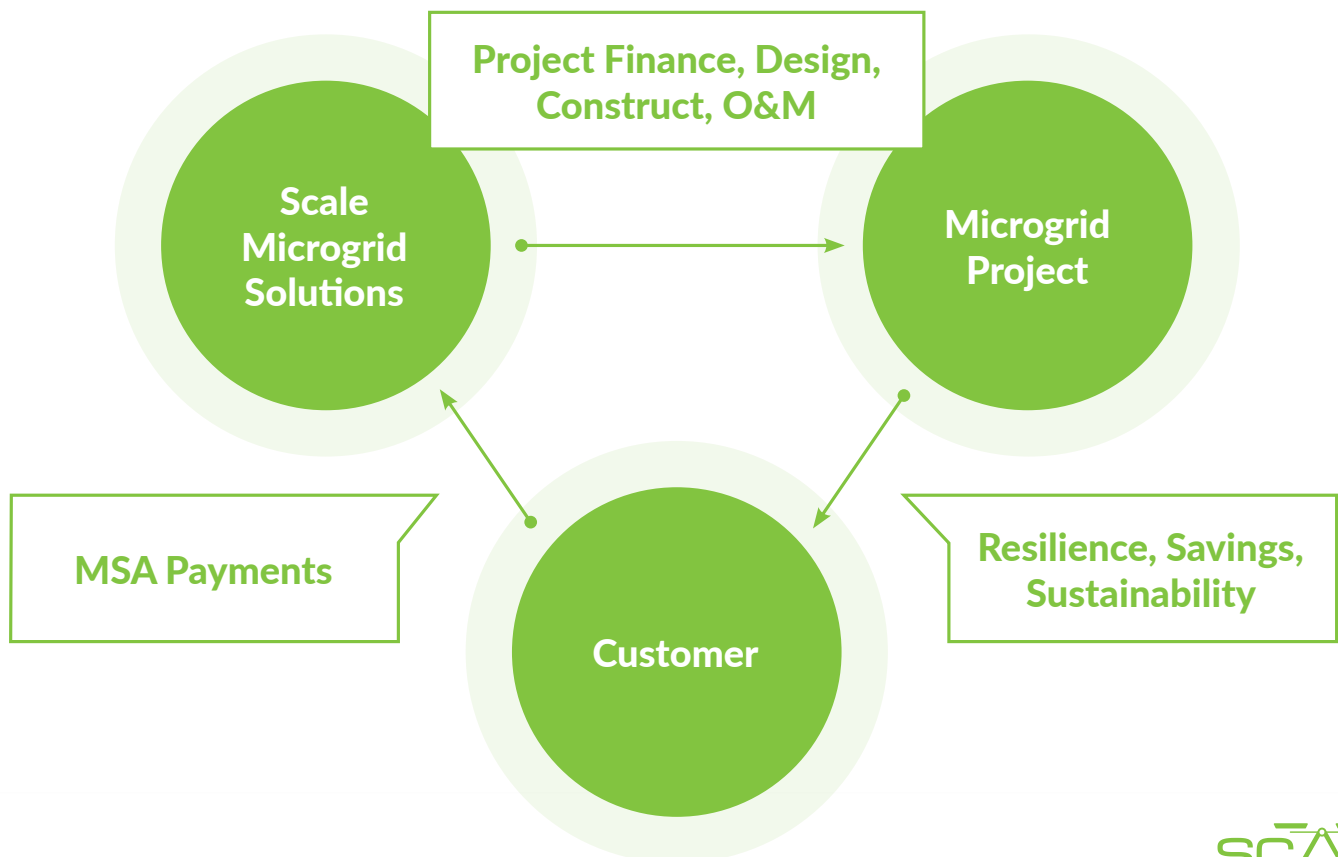
Integrates DER into an intelligent, pre-engineered, and configurable power control center to easily optimize resources and maximize facility performance.

Manufacturer	3 Configurable Midules	800-1200: Typically used with 25-250 kW DER's
Schneider Electric		1600-2500: Typically used with 100-750 kW DER's
Scale Microgrid Solutions		Engineered to order: Used with any size and type of DER's

MICROGRIDS AS A SERVICE

Customers don't want microgrids, they want reliable power, secure and reasonable energy prices, and improved sustainability. Microgrids as a Service, secured through Microgrid Services Agreements (MSAs), allow customers to procure all of the benefits of a microgrid without the large upfront expenditure, long payback periods, ongoing maintenance, or technology and operational risk that accompany a typical infrastructure project.

Under this structure, SMS finances, designs, builds, owns, operates and maintains the on-site energy system for the customer. Once the project is online, the customer begins paying SMS for the project- specific services provided (such as energy, capacity, etc.), and receives regular reports summarizing system performance, utility outage corrections, energy savings, and emissions reductions.





INDUSTRIES



COMMERCIAL/INDUSTRIAL/RETAIL

Commercial and industrial facilities represent a broad range of potential customers. The best applications for our solution are facilities that require 24/7 operations and have large energy demands. Some facilities that match this description include refrigerated warehouses, data centers, and large-scale retail.

INDOOR AGRICULTURE

Forecasted to be one of the fastest growing industries over the next two decades, Indoor Agriculture is revolutionizing the way the world thinks about farming. Most facilities have consistent load profiles and incredibly high-power density factors (kW/ft³). As such, controlling energy costs represents a significant challenge.



PUBLIC PURPOSE

Public purpose microgrids represent a paradigm shift in the way our communities' function. Its benefits are twofold: They provide safe and resilient power to critical community assets and they bolster the broader electric distribution grid.

HEALTHCARE

Hospitals and senior living facilities require round the clock power to perform critical life-saving functions under even catastrophic conditions. With large and steady thermal and electric operating requirements, our solution provides the resiliency needed while also reducing costs and carbon footprint.



CASE STUDY

Bowery Microgrid



815 kW
NATURAL GAS



150 kW
SOLAR PV



200 kW
BATTERY STORAGE

One of the most exciting projects that Scale Microgrid Solutions (SMS) built in 2019 was for a prominent VC-backed vertical farming company named Bowery Farming, who built a state-of-the-art facility in Kearny, NJ, and was looking to design an equally impressive energy solution.

Developing sustainable indoor agriculture production capabilities is critical to feeding a growing global population. 85% of the world's arable land is currently utilized, the global population is expected to grow by ~3B by 2050, and climate change will make outdoor crop production more difficult for future generations. Bowery has designed and built a facility wherein crop production is already 100 times more efficient than traditional farmland. However, in order for indoor crop production to become a truly scalable solution, vertical farms need to become more sustainable and cost effective.

The microgrid that SMS designed to address these challenges is a game-changing behind-the-meter system that utilizes a combination of photovoltaic solar panels, lithium ion batteries, and a natural gas generator outfitted with advanced emissions control technology. In addition to reducing the facility's

GHG emissions footprint by the equivalent of 23K gallons of gasoline each year, the system will generate revenue by providing ancillary services to the electric grid, and will enable mission critical operations to continue during utility outages.

The system was commissioned in July 2019.

BIG PICTURE IMPACT

As renewable generation capacity additions continue at an unprecedented rate, grid operators are being forced to deal with new and complex load balancing challenges.

Deployed at scale, the microgrid system we have designed has the potential to offer a more effective, sustainable, resilient, and cost effective alternative to traditional load balancing assets.

Moreover, as opposed to utility scale generators, behind the meter microgrid capacity can be added to the grid on an as needed basis; providing the flexibility needed to confront an uncertain future.

CASE STUDY

Gallaudet University Microgrid



3MW
CHP



4 MW
SOLAR PV



500 kW/1 MWh
BATTERY STORAGE

Gallaudet University (Gallaudet), located in Washington D.C., is the premier institution of learning, teaching and research for deaf and hard-of-hearing students. For more than 150 years, Gallaudet has produced leaders and innovators who have influenced history. There is no other place like it in the world.

In conjunction with Gallaudet's ongoing commitment to sustainability, the University has decided to construct a world class clean energy microgrid that will deliver locally generated electricity and thermal power to campus facilities. Following a solicitation that attracted industry leading companies from throughout the country, the University selected a project team led by Urban Ingenuity and Scale Microgrid Solutions – alongside a consortium of industry leading technology and contracting partners -- to design, build, and operate a project that will set a new standard for clean energy in the nation's capital.

The core of the microgrid consists of a 3 MW combined heat & power system, a 1600 kW solar array, and a 500 kW/1 MWh lithium ion battery. These components will operate in parallel to meet most of the University's electricity demand.

Additionally, Gallaudet plans to host 2400 kW of additional solar capacity that will be available to DC residents through the Community Renewable Energy Facility (CREF) Program. This additional solar capacity will generate enough renewable electricity to meet the demands of 1500 households or small businesses in DC.

The system will play a critical role in Gallaudet's efforts to reduce greenhouse gas emissions. In addition, the entire system is designed to operate in "island mode", enabling the campus to be fully operational during electric grid outages.

The project will be fully financed via a long-term Energy Services Agreement that will enable the University to offset up front capital expenditures and benefit from attractive annual savings.

Commissioning is scheduled for FY 2021.

PARTNERS

Scale Microgrid Solutions has partnered with **industry-leading incumbents** to offer the savviest microgrid products in the market.

WARBURG PINCUS

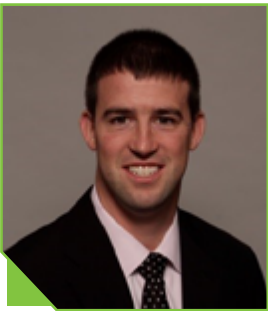
At Warburg Pincus, private equity investing is our only business. Established over 50 years ago, Warburg Pincus has invested more than \$79 billion in more than 880 companies in more than 40 countries around the world. Years of private equity experience, deep industry knowledge, and unparalleled networks of resources enable our team to identify opportunities, attract outstanding entrepreneurs and business leaders, and ultimately partner effectively with entrepreneurs and management teams to grow successful businesses.



Schneider Electric is leading the Digital Transformation of Energy Management, Automation, and Microgrids in Homes, Buildings, Data Centers, DoD bases, Infrastructure, and Industries. With revenues of €25 billion in FY2016, Schneider Electric's 144,000+ employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient, and sustainable. As the indisputable leader in Power Management – Medium Voltage, Low Voltage, Secure Power, and in Automation Systems, Schneider Electric provides integrated energy efficiency solutions, combining energy, automation and software.

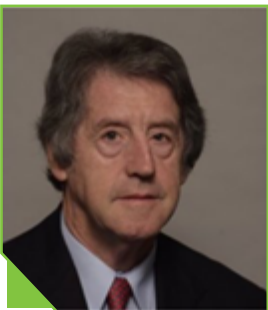
LEADERSHIP

Scale Microgrid Solutions, Inc. ("SMS") was co-founded in 2016 by (3) former ENER-G Rudox, Inc. executives following the acquisition of our firm by a multinational utility company. Our core focus is building cutting-edge distributed energy resources that offer commercial & industrial facilities a cheaper, cleaner, and more resilient alternative to traditional utility services. At scale, the technology solutions that we are designing have the potential to be a key component of the broader climate action solution on which the future of humanity depends.



RYAN GOODMAN
CEO

From 2011-2016, Ryan served as the President of ENER-G Rudox, Inc., a New Jersey based organization focused on developing on-site energy solutions for commercial and industrial customers. Under his leadership, the company developed several cutting edge-sustainable energy projects that have received national acclaim. In addition to his operational responsibilities in North America, Ryan also sat on the Board of ENER-G's global business, where he help set the strategy of the business across 21 countries.. In 2015, Ryan was one of 80 industry leaders invited to attend the White House Climate Change Summit, and played a key role in organizing the American Business Act on Climate Pledge. Prior to joining Rudox, Ryan worked at for Boston Consulting Group and GE Energy. He holds B.S. in Electrical Engineering from Bucknell University, and received his MBA from Harvard Business School.



HOWARD GOODMAN
CTO

With over 35 years of electrical engineering and energy system design experience, Howard is widely regarded as one of the leading technical minds in the power generation industry. Since joining Rudox Engine and Equipment Company in 1976, Howard has developed on-site power solutions for hundreds on commercial and industrial end-users including organizations such as Verizon, UPS, the Port Authority of NY and NJ, Goldman Sachs, Yale University, Columbia University, Morgan Stanley, BMO, the US Department of Defense, NASA, the United Nations Headquarters, and most recently Three World Trade Center. Prior to joining Rudox, Howard worked at McKinsey and Company. He holds a B.S. in Mechanical Engineering from Syracuse University, and received his MBA from the University of Pennsylvania (Wharton).



TIM HADE
COO

A certified LEED AP, Tim previously served as the BD Manager for ENER-G Rudox from 2012 – 2016. In this role, Tim oversaw all aspects of project development for the company's turnkey sustainable energy projects, executing performance contracts in excess of \$25M over that time. In addition to his primary role, Tim served as an advisor for both the Business Council for Sustainable Energy and the US Department of Energy. In 2015, Tim's white paper (co-authored by Ryan Goodman) "Sustainable Load Balancing: Integrating Distributed Natural Gas, Solar PV, and Energy Storage Assets" was named the 2015 Renewable Energy World Paper of the Year. Prior to joining Rudox, Tim served as an officer in the United States Air Force. He holds a B.S. from the United States Air Force Academy, and received his MBA from Stanford University.