Capstone energy+

Beyond the Grid: On-Site Power for Port Electrification

Shore Power, Terminal Electrification, Resiliency, Utility Constraints, and Flexible On-Site Power



NASDAQ: CEPL

PCNC Presents New Maritime Wave-Nov 10, 2026

Port Electrification Creates New Site-Specific Power Requirements

New electrical loads can exceed available utility capacity and create challenges around timing, reliability, cost, and execution

Terminal electrification demand

Electric cranes, yard tractors, forklifts, trucks, pumps, and charging systems create substantial new loads.

Utility capacity & timing

Substation, transformer, feeder, and interconnection upgrades may not align with project schedules.

Resiliency & Operational continuity

Port operations cannot always tolerate outages, voltage instability, or grid constraints.

Facility and thermal energy

Warehouses, workshops, offices, refrigeration, cooling, hot water, and process loads continue.

Permitting, funding & execution

Projects may involve port authorities, utilities, terminal operators, EPCs, environmental agencies, and funding requirements

Shore Power Demand

Vessel shore power can create large, intermittent, and concentrated electrical loads.

Takeaway:

Port electrification is not only an equipment decision—it is an energy infrastructure and operational-continuity decision.



On-Site Power Close to Critical Port Loads

Capstone solutions are evaluated against each terminal's electrical demand, utility constraints, operating schedule, and resiliency objectives

Site requirement	Capstone support option
Shore-power requirements	Supplemental on-site generation
Cargo-handling equipment charging	Bridge power before utility upgrades
Utility capacity and upgrade timeline	Shore-power support
Terminal operating schedule	Charging-infrastructure support
Backup and resiliency objectives	Backup-capable generation
Refrigerated container loads	Prime or continuous power
Facility heating, cooling, and hot water	CHP or CCHP where thermal demand exists
Emissions and air-quality requirements	Modular phased expansion
Available fuel and site space	Purchase, rental, lease-to-own, or EaaS evaluation
Capital and procurement preferences	

Evaluate whether on-site generation can improve project timing, resiliency, power quality, cost control, and utilization of existing port infrastructure.

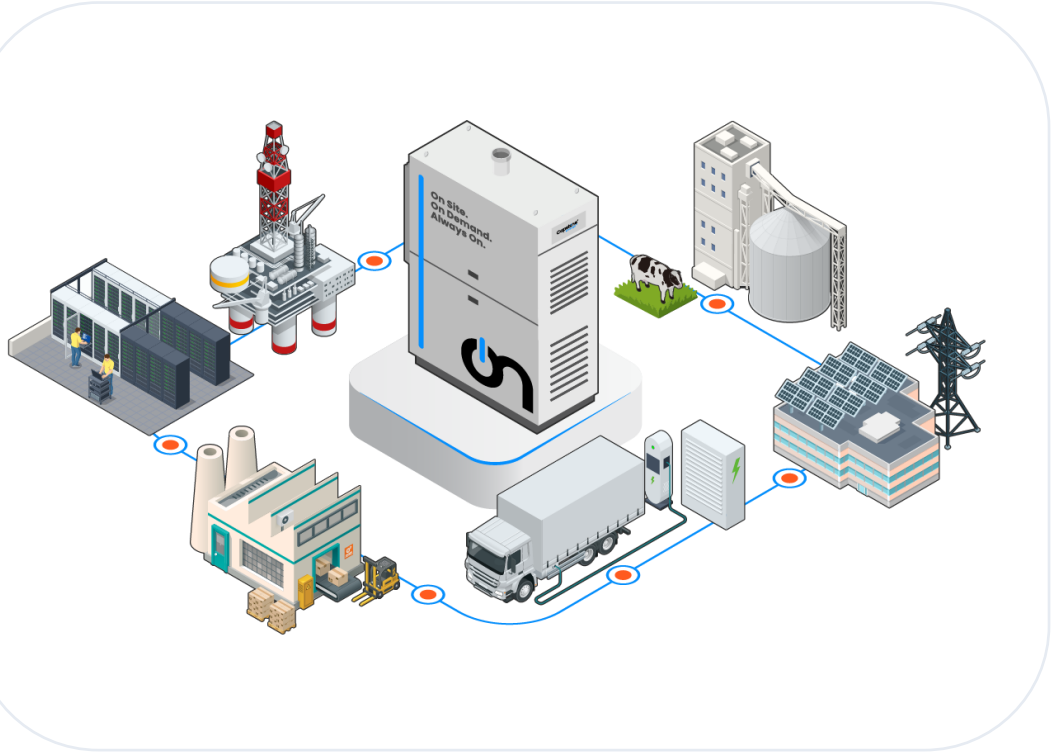
Who is Capstone Energy+

On site. On Demand. Always On. A global provider of compact, low-emission, modular distributed-energy systems for critical and constrained facilities

Capstone Energy+ provides compact, low-emission distributed energy systems for customers that need reliable power, resiliency, and useful facility energy since 1988.

Why This Matters for Ports

- On-site generation near berths, chargers, and critical infrastructure
- Modular platform: 65 kW to multi-MW configurations
- Grid-connected or island-mode applications where designed
- Compact footprint for space-constrained facilities
- Commercial options: purchase, rental, lease-to-own, or EaaS
- More than 10,800 systems sold across 89 countries



Scalable systems from compact sites to multi-MW applications

Takeaway:

Capstone helps ports and terminal operators evaluate whether on-site power can support electrification, resiliency, utility constraints, emissions objectives, and facility-energy requirements.

Proof Point: Reagan Library CCHP Application

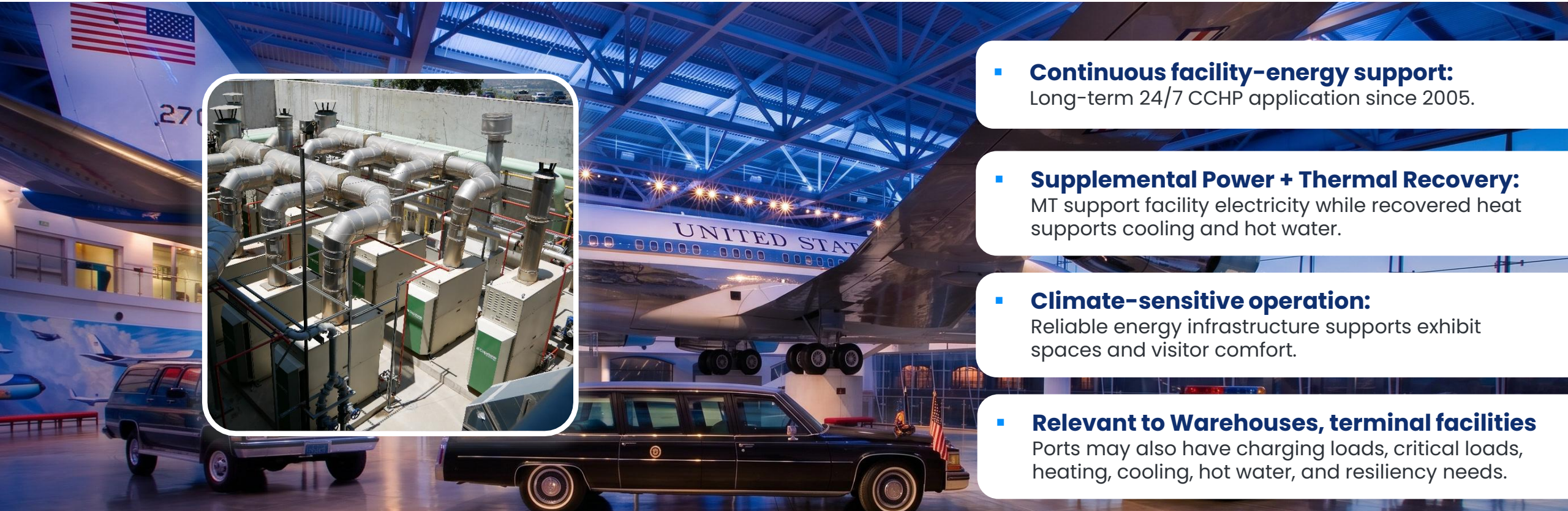
Ronald Reagan Presidential Library & Museum — supplemental power, cooling, hot water, and facility energy support

~95%
Facility Electricity

16x
C65 Microturbines

387tons
Cooling Capacity

>$300k
Annual Operating Cost Savings



- **Continuous facility-energy support:** Long-term 24/7 CCHP application since 2005.
- **Supplemental Power + Thermal Recovery:** MT support facility electricity while recovered heat supports cooling and hot water.
- **Climate-sensitive operation:** Reliable energy infrastructure supports exhibit spaces and visitor comfort.
- **Relevant to Warehouses, terminal facilities** Ports may also have charging loads, critical loads, heating, cooling, hot water, and resiliency needs.

Use Cases to Evaluate by Site

The same Ports terminals may need EV charging support, resiliency, and facility energy support.

Shorer-power support

Supplement vessel-at-berth demand, manage concentrated loads, and support phased deployment.

Backup and resiliency

Protect critical terminal operations, gates, security, communications, pumps, and emergency systems.

Supplemental or prime power

Provide behind-the-meter generation where grid capacity is limited or loads operate for extended hours.

Facility and refrigeration loads

Support reefer containers, cold storage, warehouses, offices, workshops, cooling, and hot-water demand.

Discussion Prompt:

Which requirement is driving the project first: shore power, equipment electrification, utility capacity, resiliency, emissions compliance, or deployment timing?

A Platform Built for Clean, Compact, Reliable Port Power

Capstone technology characteristics align with the space, emissions, maintenance, reliability, and scalability requirements of port environments

Port or terminal consideration

- Local emissions and air quality
- Sound-sensitive boundaries
- Limited terminal space
- Growing electrical demand
- Continuous operations
- Maintenance requirements
- Fuel availability
- Resiliency requirements
- Thermal demand

Capstone relevance

- Low-emission distributed generation
- Low-sound operating profile
- Compact footprint
- Modular 65 kW to multi-MW platform
- High-availability system architecture
- Single moving part and air bearings
- Natural gas, RNG, LPG, and hydrogen blends where applicable
- Grid-connected or island-capable configurations
- High-grade exhaust heat for CHP or CCHP

SINGLE MOVING PART | **AIR BEARINGS** | **FUEL FLEXIBILITY** | **HIGH-GRADE HEAT** | **GRID-CONNECTED OR ISLAND MODE**

Designed to Support Complex Port Project Execution

Successful projects require an execution-ready path through permitting, interconnection, engineering, procurement, delivery, and commissioning

UL certification / standards support

Applicable product certifications and standards support project review.

BABA compliance pathway

Requirements reviewed by funding source, configuration, and project structure.

Documented for authorities and EPCs

Standard packages support permitting, design, installation, and execution.

Time-to-market advantage

Strong delivery timing for near-term infrastructure options.

Proven global deployment

More than **10,800** systems sold across **89** countries.

A successful port-energy project requires coordination among the port, terminal operator, utility, EPC, permitting agencies, and funding stakeholders.

Commercial Structures Aligned with the Port Project Timing

The ownership and financing structure should reflect the project duration, utility timeline, capital availability, and operating responsibility

Site / agency priority	Commercial option to evaluate
Long-term ownership	Purchase
Temporary or bridge power	Rental
Budget flexibility with ownership path	Lease-to-own
Service-based structure	EaaS where applicable
Phased deployment	Scalable system configuration

Economics depend on utility tariffs, demand charges, fuel pricing, operating hours, shore-power schedules, equipment-charging profiles, maintenance, thermal value, resiliency value, emissions requirements, and available funding.

Port Site-Specific Power Review Framework

A practical next-step framework for evaluating technical, economic, and operational viability.

1 Discuss site priorities

- ✓ Shore-power plans
- ✓ Cargo-equipment electrification
- ✓ Truck and vehicle charging
- ✓ Utility constraints
- ✓ Transformer and feeder capacity
- ✓ Resiliency objectives
- ✓ Reefer and cold-storage requirements
- ✓ Terminal operating schedule
- ✓ Emissions and sound considerations
- ✓ Target deployment date
- ✓ Ownership and procurement structure
- ✓ Funding, procurement, compliance

2 Collect site data

- ✓ 12 months of electric bills
- ✓ Utility tariff and demand charges
- ✓ Interval or load-profile data
- ✓ Shore-power load and schedule
- ✓ Charger count and ratings
- ✓ Cargo-handling equipment load
- ✓ Reefer-container load
- ✓ Natural-gas availability and rate
- ✓ Existing one-line diagram
- ✓ Utility-upgrade timeline
- ✓ Available equipment area
- ✓ Existing backup-generation assets
- ✓ Air-permitting requirements

3 Build preliminary review

- ✓ Grid-only baseline
- ✓ Potential on-site-generation case
- ✓ Bridge-power case
- ✓ Phased-expansion case
- ✓ Fuel and maintenance costs
- ✓ Demand-charge effects
- ✓ CHP or CCHP value
- ✓ Resiliency contribution
- ✓ Preliminary emissions screening
- ✓ Commercial alternatives
- ✓ Preliminary TCO and ROI screening

Determine whether a Capstone solution is technically, economically, environmentally, and operationally viable for the port or terminal.

Port and Terminal On-Site Power Evaluation Checklist

A simple tool for identifying site constraints, cost-reduction opportunities, resiliency needs, and next steps

The following checklist can be taken back to your transit facility and completed by the facility manager, fleet/charging team, energy manager, finance/procurement team, or other relevant stakeholders.



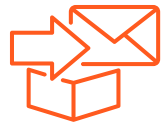
Fill out the checklist

Capture port operations, shore-power plans, equipment-electrification loads, utility constraints and resiliency needs.



Gather available documents

At minimum, provide one electric and gas utility bill; preferably provide 12 months of electric and gas bills.



Send package to Capstone

Capstone Energy+ will prepare a complimentary Site-Specific Review Framework Report.

Complimentary review: Capstone Energy+ will evaluate where on-site power may support shore power, terminal electrification, utility timing, resiliency, cost control, supplemental or prime power, CHP/CCHP, refrigeration, and other facility-energy requirements.

Confidentiality: Capstone Energy+ will treat submitted information as confidential and use it solely to prepare the site-specific review. Information will not be shared with third parties without authorization from the submitting organization, except as required by law.

Capstone energy+

On Site. On Demand. Always On.



Let’s Evaluate Your Port’s Power Requirements

Shore power. Terminal electrification. Bridge power. Resiliency. CHP. Modular expansion.

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