



Supporting Emerging Energy Management Strategies with Demand Response

October 17, 2023 / kroffi@voltus.co

voltusTM

EMERGING ENERGY MANAGEMENT STRATEGIES FOR WASTE/WATER TREATMENT & RECYCLING PLANTS

**Monetizing
demand response
& battery storage**

**Monetization
technology**

**Demand response
in action**



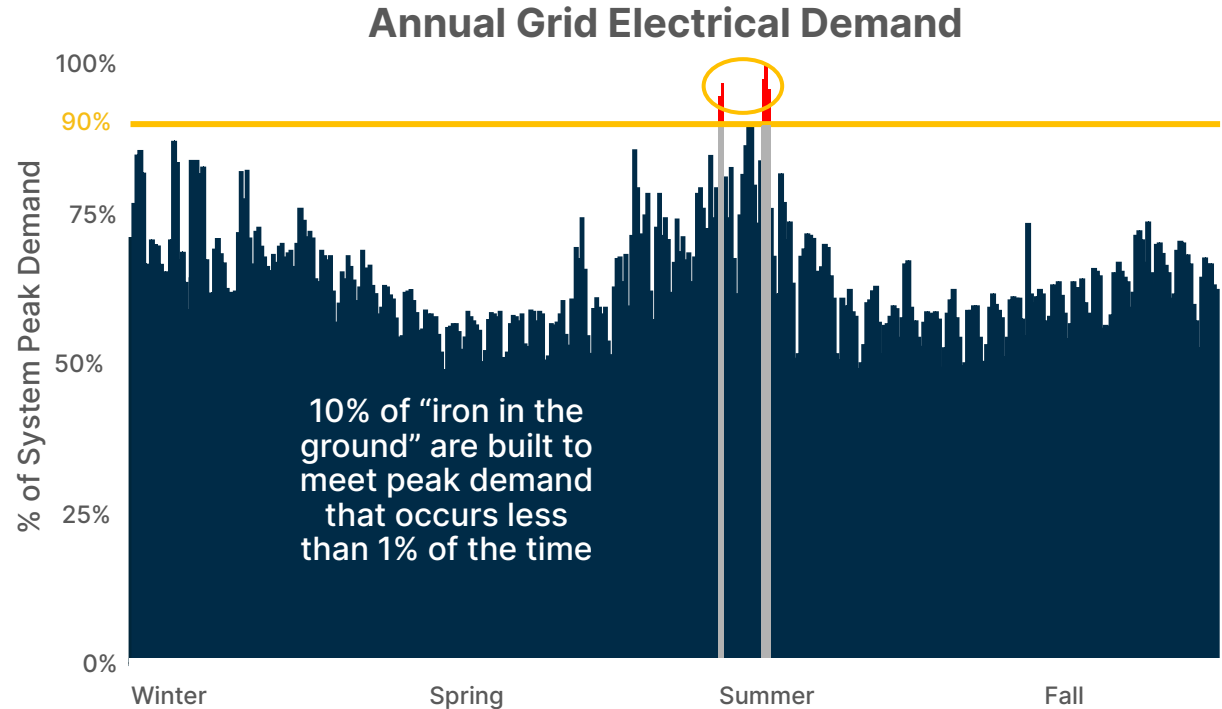
What is **demand response**?

Earn cash by adjusting your power use when the grid needs it.

What is **demand response**?

A **reliable, cost-effective** way to meet peak electrical demand.

Avoids the need to build generation and transmission capacity that will be used less than 1% of the year.



More markets, more megawatts

Voltus is a leading distributed energy resource (DER) platform.
We monetize all DER types across all nine wholesale power markets in the US & Canada.





TREND #1

**Monetizing energy
conservation and
battery storage**

WHY CUSTOMERS PARTICIPATE

**Contribute to a more
reliable grid**

**Earn energy
revenue**

How waste & water treatment/recycling plants participate in DR

**Turn off
equipment**

**Switch to qualified
generator**

**Switch to
battery storage**



GBT, wasting pumps, primary sludge pumps, digester mixing pump, belt presses, grit pumps, grit washer, deaeration tank blowers, lowering clarifier rake speed, reduce number of screw presses in use

\$350,000/MW-yr

Monetizing battery storage can
earn you 5X the \$\$



TREND #2

**Technology to make
demand response easy**

Waste/Water Treatment & Recycling Plant

All sites / All programs

2022

Carbon Reporting

Total Forecasted Value [CashDash](#)

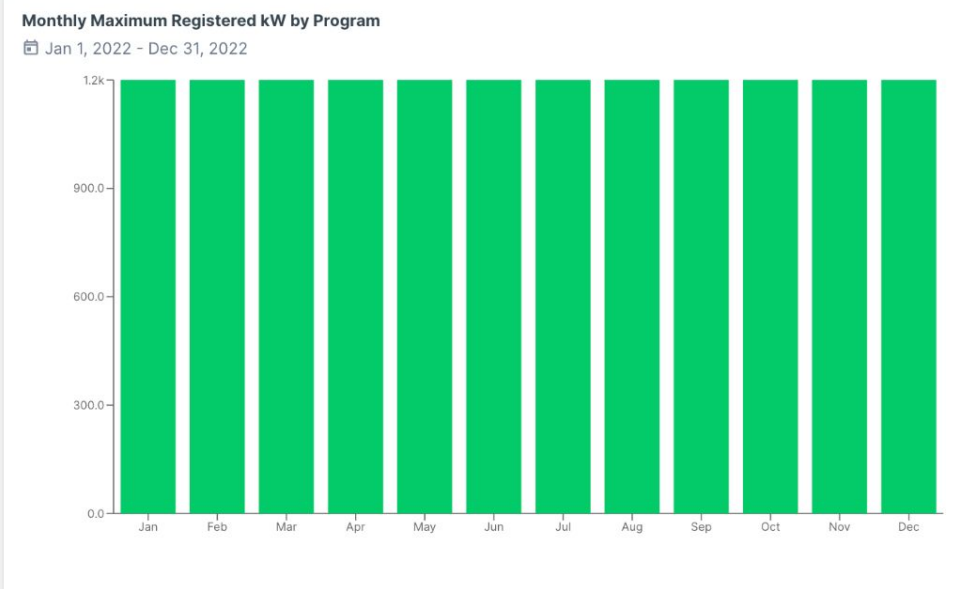
Jan 1, 2022 - Dec 31, 2022

\$314,307

Historic Average Performance [Dispatches](#)

92%

You're leaving money on the table
Contact Volatus at (415) 463-4236 to learn how you could improve your performance



Net Avoided CO₂ Emissions
All Sites & Programs

All Time

You avoided emissions of

29.4[?]

metric tons of CO₂

Equivalent to avoided GHG emissions from

72,993 miles driven by a gas vehicle

Do you like this new feature?

[Provide more feedback](#)

Registered Sites (1)

[Download CSV](#)

Site	Current Dispatchable Status	Registered kW
DEMO Facility 604117	Active	1,200

Waste/Water Treatment & Recycling Plant

All sites ▾ / All programs ▾

2023 ▾

Values shown in CAD 🇨🇦

Total Forecasted Value ⓘ

📅 Jan 1, 2023 - Dec 31, 2023

\$224,870

Net Earnings **\$224,870**

Confirmed ⓘ **\$86,582**

Completed Payments **\$86,582**

Pending Earnings **\$0**

Pending Fees + Services **\$0**

Forecasted ⓘ **\$138,288**

Last Payment ⓘ

[View details](#)

Sep 26, 2023 **\$30,782.26**

For period Jun 1, 2023 to Jun 30, 2023

Total Forecasted Value by Status

📅 Jan 1, 2023 - Dec 31, 2023

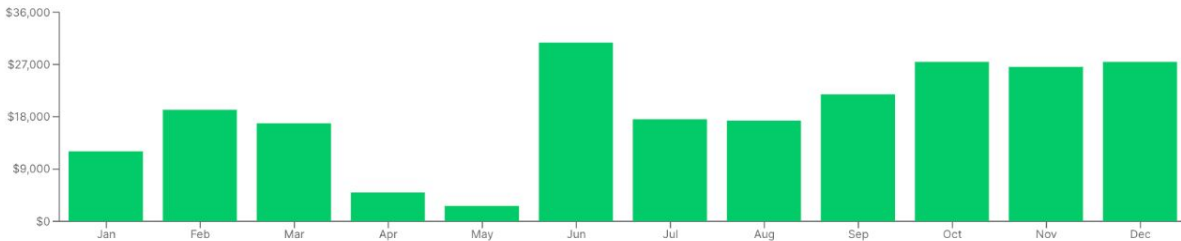
NET EARNINGS ⓘ

\$224,870



Total Forecasted Value by Program

📅 Jan 1, 2023 - Dec 31, 2023



Activity

Status ▾ Category ▾ [Download CSV](#)

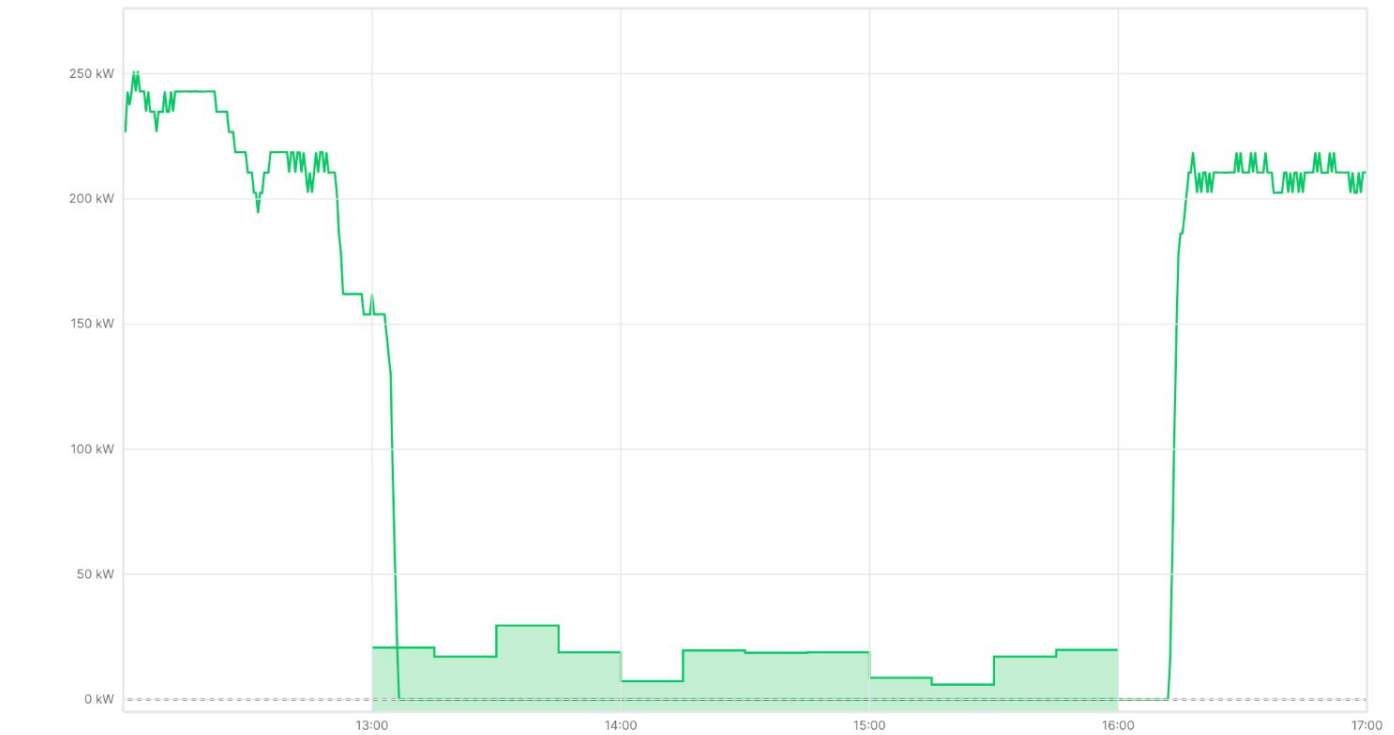
Date	Site	Description	Status	Category	Amount	
Dec 31, 2023	DEMO Facility 604117	AESO - Operating Reserves - Dec 2023	Forecast	Capacity	\$27,460.80	📄

Waste/Water Treatment & Recycling Plant Site X

1 selected Hide sidebar

DEMO Facility 598520 X

- Data
 - Dispatchable Programs
 - Site Info [Site Details](#)
- Latest Load**
Jun 27, 2023 16:59:30 PDT
- 211 kW**
- Meters (kW) ▾
 - Meters (Power Factor) ▾
 - Meters (kVA) ▾



Granularity: 30sec • Smoothing: 2min



TREND #3

**Beyond emergencies:
VPPs serve as routine grid
resources**

Gas and Coal Failures Widespread as Largest Grid Operator in U.S. Struggled to Manage 'Winter Storm Elliott'



By: [Climate Nexus](#) | Updated: January 12, 2023 |

Complaints to FERC over PJM Performance Penalties Multiply

Lincoln Power Files for Bankruptcy

FERC Pressed To Halt Grid Operator's Winter Storm Penalties

By Keith Goldberg (April 5, 2023, 6:41 PM EDT) -- Power plant owners are urging the Federal Energy Regulatory Commission to block PJM Interconnection from imposing up to \$2 billion in penalties for not operating during winter storm

DIVE BRIEF

LS Power, other Illinois power plant owners ask FERC to nix \$275M in PJM Winter Storm Elliott penalties

Voltus Helps Mitigate the Impact of Winter Storm Elliott by Providing 11.6 GWh of Electricity Reduction Across the US and Canada

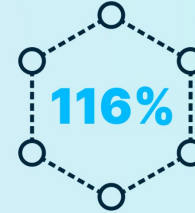
Voltus customers provided critical grid relief as extreme weather and record low temperatures impacted millions during the holidays

January 5, 2023

[Press Release](#)

Winter Storm Elliott

Voltus's portfolio of customers performed at...



Overall in PJM's ELRP program

(December 23 and 24, 2022)

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How to **take advantage** of these trends

- 1 Monetize your flexibility
- 2 Maximize your earnings
- 3 Always evaluate new technologies

Thank you!

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voltus™

