

SPONGE

Microgrids

BUILDING RESILIENCE WITH SMARTER SOLAR

ENERGY MANAGEMENT CONTROLLER



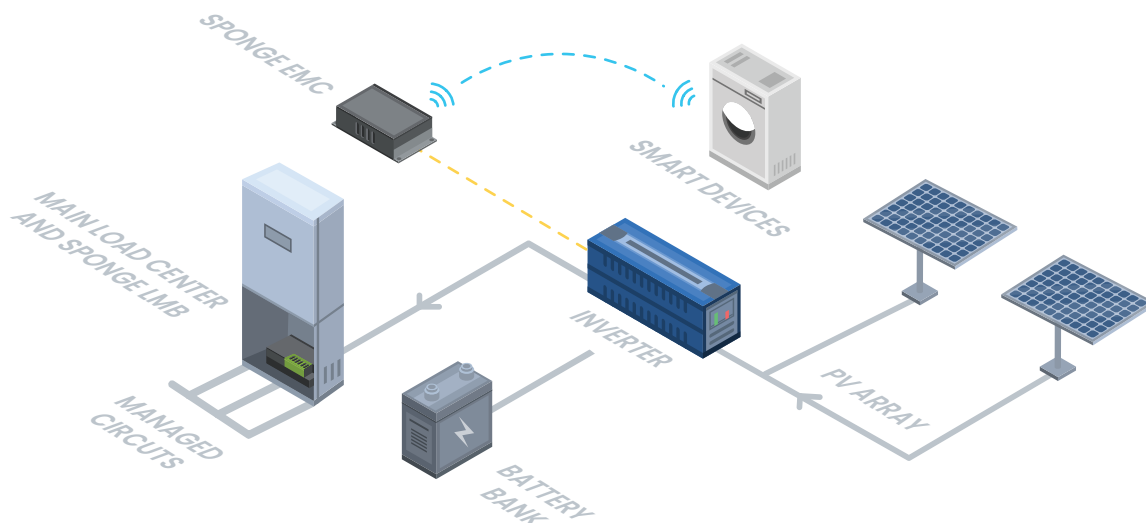
What Is An EMC?

The Sponge Energy Management Controller (EMC) is the brain behind your solar system. The EMC leverages consumption, weather and utility data to forecast load, generation cost, and outage risk at your site on an ongoing basis. Our control algorithms use this information to determine and execute the optimal control strategy to minimize cost and maximize protection ensuring you can squeeze every last drop of value out of your system.

KEY FEATURES

- **Local data** storage and compute
- Web app for **remote monitoring** & control
- Forecasts **load, generation, cost and outage risk**
- Continuous **over-the-air updates**
- **1.5 yr average** payback period
- Zero-Export Control

INTEGRATION SCHEMATIC



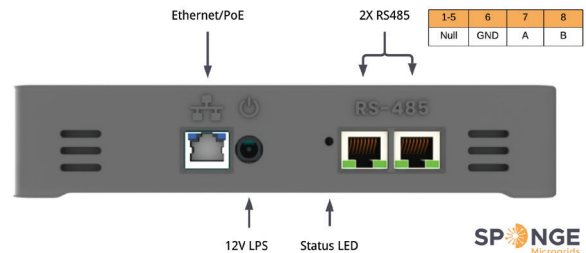
COMPATIBLE BRANDS



...AND MORE. ASK US ABOUT NEW INTEGRATIONS!

Performance Benefits

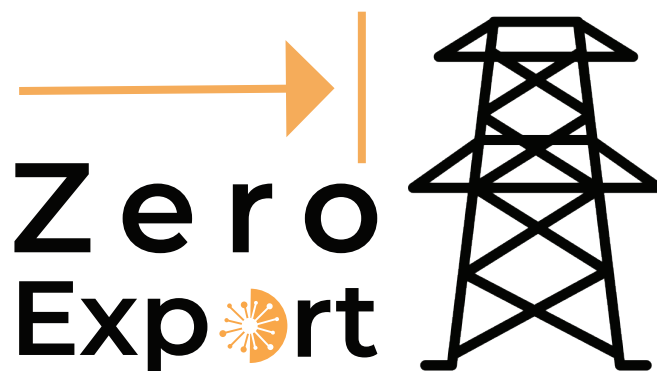
- Up to **45%** more savings
- Up to **30%** less generator runtime
- Up to 2X better outage protection
- Reduced system payback period



Feature	EMC Basic	EMC Pro	EMC Pro +
Sponge CPU	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Touchscreen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RS485 Ports	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Passive Cooling	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1x Ethernet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PoE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wifi	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Expansion Terminal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local Data Storage	10 Years	10 Years	10 Years
Zero Export Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Power Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Max System Size	30 kW	250 kW	Unlimited
Optimization Int.	10 Minutes	2 Minutes	2 Minutes
NEMA Enclosure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Network Switch	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cellular	<input type="checkbox"/>	<input type="checkbox"/>	Upon Request

Get In Touch!

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Zero Export is a standard feature of the Sponge EMC Pro & Pro+

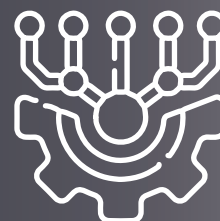
Sponge EMC's Zero Export control is the most reliable way to limit power backflow to the grid. When Zero Export is enabled, the EMC will issue active power setpoint commands to the inverter, curtailing production to ensure that generation matches consumption.

Benefits

- Comply with Zero Feed-In restrictions to **gain government incentives**
- Manage multiple inverter brands at once
- Simple commissioning - No programming knowledge required
- Enables **load shifting optimization** to improve project payback periods

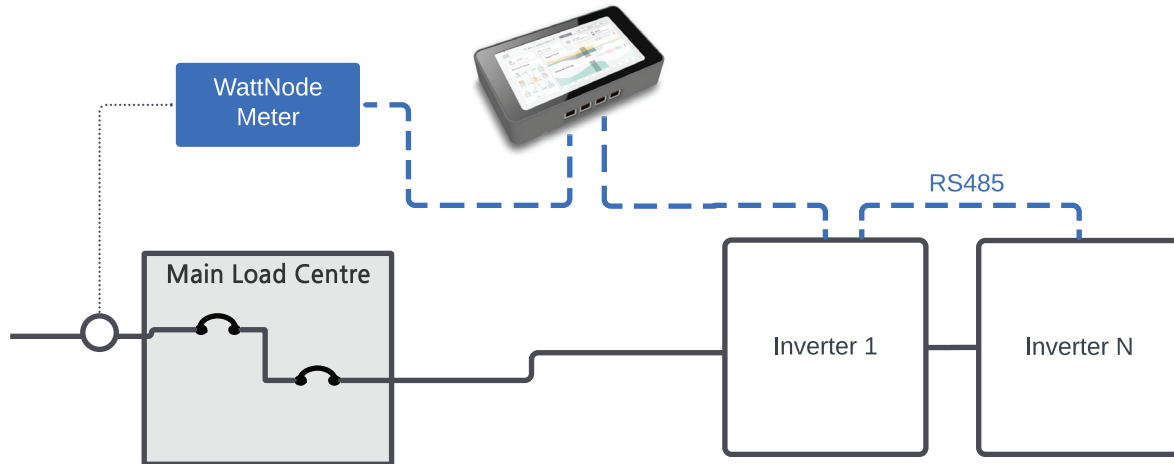
Sponge Zero Export Package

- Sponge EMC Pro
- Energy Meter
- Current Transformer
- Optional: Disconnect Device
- Optional: Optimization

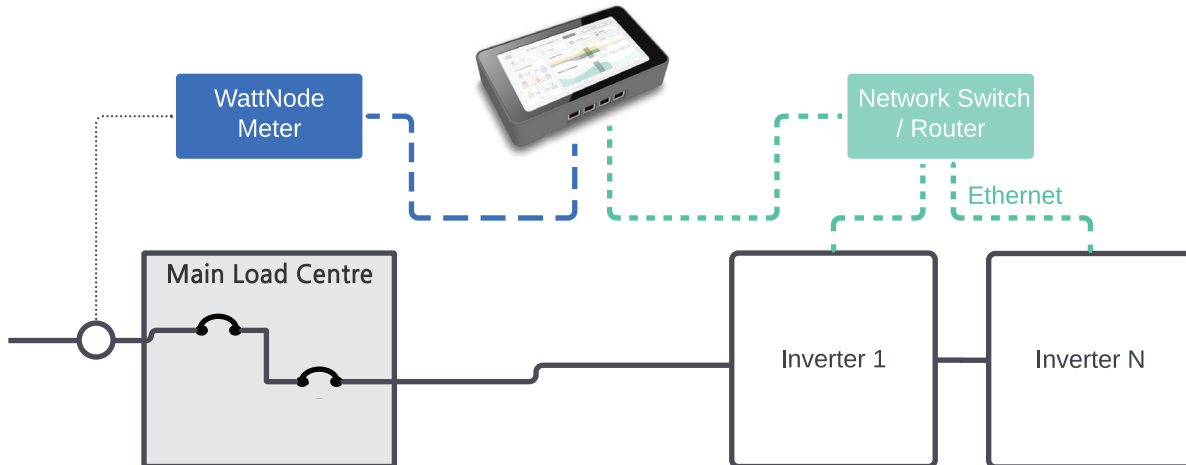


System Configurations

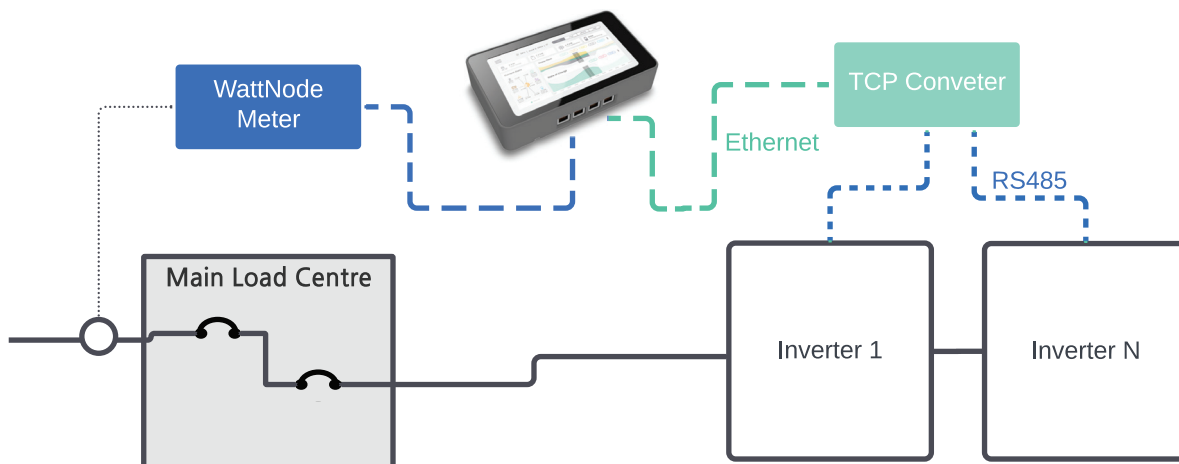
Modbus RTU



Modbus TCP



Modbus TCP Converter



Control Specifications

Sponge EMC uses dynamic active power setpoint calculation considering actual load and PV generation and net rates of change.

Modbus Type	RTU - 1 Inverter	RTU - 10 Inverters	TCP - X Inverters
Loop Frequency	5 Hz	1 Hz	5 Hz
Maximum Inadvertent Export Duration	2s	10s	2s

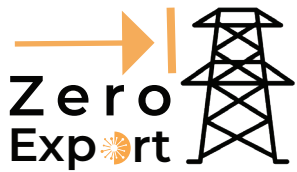
- Connect through two RS485 ports for faster communication
- Modbus TCP enables parallel comms, faster control, RTU-TCP converters can be included where necessary.
 - This solution is recommended for projects with a large number of inverters and in stricter regulatory environments.
- Control Frequency is governed by the response time of the inverters.
- Max dead time/ Min permissible frequency depends on project specific factors.

Fail Safe Modes

Failure Mode	Effect
Loss of Meter Communications	Inverter set to min 14-day trailing load
Loss of Inverter Communications	Push notification to operator

- Set to % of 14-day minimum trailing load to keep system safely in non-export regime.
- Auto-detection of communication failures
- Automatic switch from normal to fail-safe operation mode

Reduce **Payback Period** on Zero Export Projects with Sponge Optimization



Included with:

**Sponge
EMC**



and

Monitor Base
Configure and Control

**One-Time Hardware
Purchase**

Hybrid PV Optimization

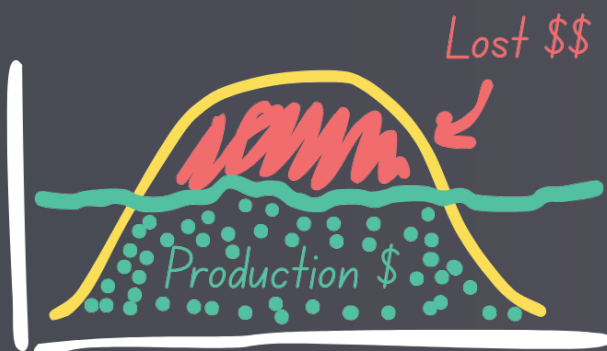
Smart Storage & Load Shifting

**5 Year Commercial
Optimization Subscription**

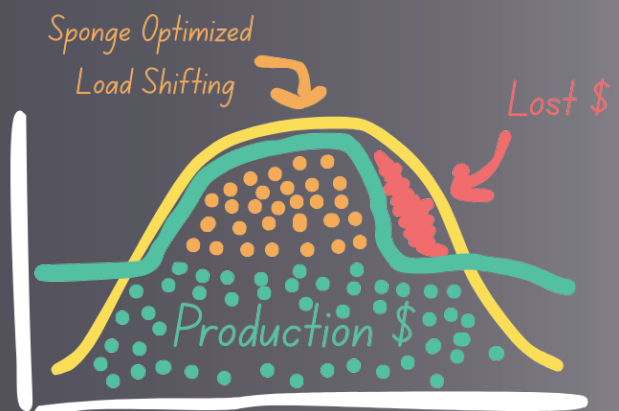
Subscription

Ask about our
**FREE 1 Year
Optimization Trial!**

Load Displacement
Results in Curtailment



Sponge Optimization
Reduces Curtailment



Less Curtailment = More \$ Saved

Visualize Zero Export Power Flow with Sponge Advanced Monitor



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**Sponge
EMC**
and



Monitor Base
Configure and Control

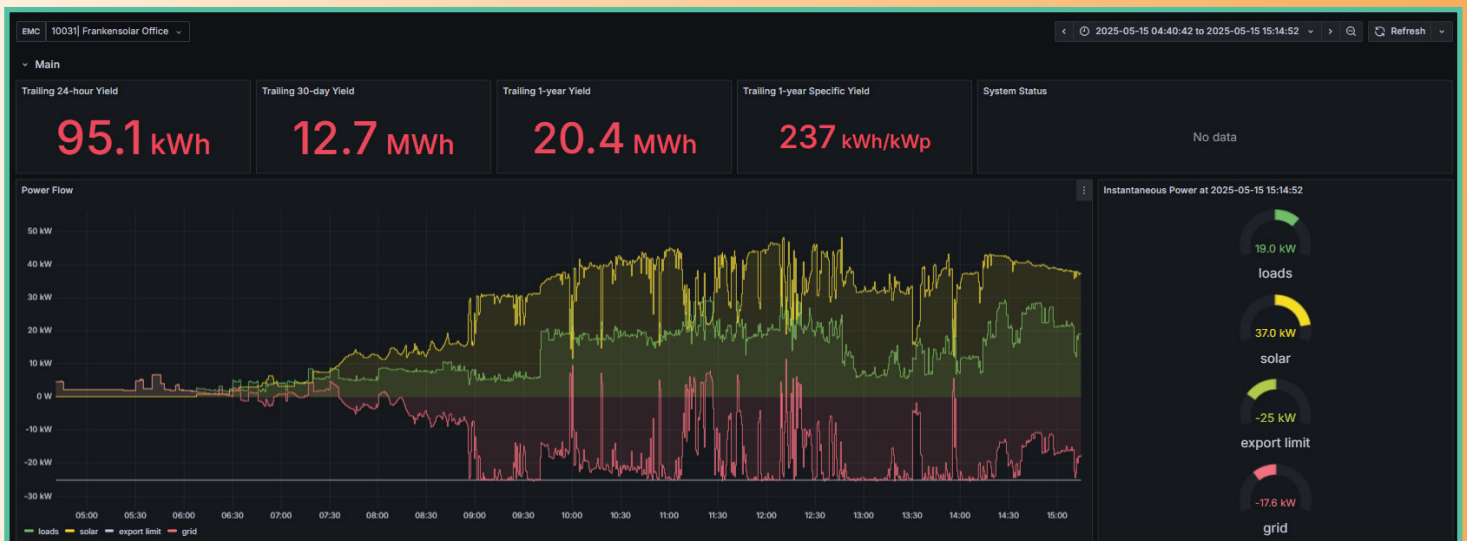
Advanced Monitor

Mission Critical Alerts and KPIs

2 Year & 5 Year
Subscriptions

One-Time Hardware
Purchase

Subscription



Benefits

- Monitor multiple inverter types in a single dashboard
- Load Tracking Metrics
- Unify and Organize Push Email notifications
- Troubleshooting tools