Intelligent Energy Management
For Industrial and Commercial Facilities
“Smart Grid Systems for controlling facility power usage and allowing users to manage costs without negatively impacting operations.”
Some of Our Clients

- E&J. Gallo (4 sites)
- Stockholm Airport (2 sites)
- FritoLay (4 sites)
- Cargill (2 sites)
- Amy’s (2 sites)
- Paul Masson Winery (4 sites)
- Park Inn (2 sites)
- Kellogg’s (2 sites)
- Wahlborgs (2 sites)
- VersaCold (8 sites)
- Constellation (2 sites)
- Dannon (2 sites)
- Thru Tek (2 sites)
- Federal Mogul (2 sites)
- IKEA
- The Buck Company
- The Miami Herald
Intelligent Energy Efficiency

Using advanced technology and smart program management to lower kWh spending while balancing the needs of production, safety, and comfort.

Benefits:

- **Quick Payback:** typically 2 to 24 months
- **Savings:** 2-15% reduction in overall electrical bill
- **Innovation:** Providing application-specific measures and control techniques that go beyond simple load cycling.
Intelligent Demand Control

Using dedicated automation systems to predict and mitigate peak demand charges while maintaining strict control over operations.

Benefits:

- **Quick Payback**: 2 to 18 months
- **Savings**: 10 – 40% reduction in overall peak demand
- **Innovation**: Well tuned predictive algorithm produces precisely-timed load curtailments while embedded rules logic protects run-time requirements.
Automated Action Controls Monthly Peaks

- Random coincidental spikes in kW result in high peak-demand based charges from utility
- Many times the kW usage is simply shifted or slightly delayed, lowering peak kW while not affecting site productivity based on total kWh
Intelligent Demand Response

When a smart system implements sophisticated control schemes designed to tightly coordinate externally triggered curtailment events.

Benefits:

- **Quick Payback**: 0-6 months
- **Savings**: Achieved through revenue generation as well as potential reduction in electricity costs
- **Innovation**: Complete automation to manage entire site curtailment event from end-to-end without any human interaction and associated risk
Savings via *Intelligent* Demand Response

**Accurate & Reliable Demand Response**

![Graph showing savings via intelligent demand response](image)

- **Curtailment Event Duration**
- **DR Baseline**
- **DR Curtailment Commitment**
- DR Baseline - Curtailment Commitment = DR Setpoint

Time

kWh

12:00 am, 1:00 am, 2:00 am, 3:00 am, 4:00 am, 5:00 am, 6:00 am, 7:00 am, 8:00 am, 9:00 am, 10:00 am, 11:00 am, 12:00 pm, 1:00 pm, 2:00 pm, 3:00 pm, 4:00 pm, 5:00 pm, 6:00 pm, 7:00 pm, 8:00 pm, 9:00 pm, 10:00 pm, 11:00 pm, 12:00 am
Intelligent Pricing Response

Automatically adjusting power usage based on real-time utility prices. Pre-defined curtailment strategies are implemented in response to changing price thresholds.

Benefits:

- **Quick Payback:** 6-24 months
- **Savings:** Reduction of average KWh rate by managing run-time during high price periods
- **Innovation:** System reads real-time electricity prices and implements pre-set load management strategies, logging savings and protecting key processes
Savings via *Intelligent* Pricing Response

*Automated Response to Active Price Changes*

Hourly Price

$/MWh

Maximum Response

Major Response

Minimum Response

RTP Curtailment

No Response

Time

12:00 am
1:00 am
2:00 am
3:00 am
4:00 am
5:00 am
6:00 am
7:00 am
8:00 am
9:00 am
10:00 am
11:00 am
12:00 pm
1:00 pm
2:00 pm
3:00 pm
4:00 pm
5:00 pm
6:00 pm
7:00 pm
8:00 pm
9:00 pm
10:00 pm
11:00 pm
12:00 am
Curtailment Challenges

Any Solution Must Address These Concerns:

- Load shedding is risky
  - Dynamic, rules-based intelligence to protect production/minimize risk

- Can’t save/earn enough to justify investment
  - Save and earn multiple ways including DR, DC, EE and RTP

- Need to protect investment in existing controls
  - Integrates with and even extends legacy systems

- Not enough automation infrastructure to be successful
  - Spara provides automation to successfully manage energy usage

- Unable to determine exact curtailment needs; lack of real-time data
  - Org-wide access to real-time data & reports for better decision-making
How System Works

How It Works

- **Controller gathers real-time data from utility meter**
- **The system calculates curtailment requirements**
- **Available loads are evaluated for and categorized for reduction**
- **The system takes coordinated action to mitigate peak charges**
- **System confirms reduction using meter data**
- **Savings are verified and documented via reports**
Spara™ Family of Products

SparaEMS™
Controller

SparaView™
System Software

SparaKonnekt™
Wireless I/O Radios

SparaProfessional Services™

Powerit Solutions™
Comprehensive Solutions

Local Level
Protecting Your Process

System lets you configure the rules and settings that protect your facilities processes...

And combines them with the intelligence of predictive and adaptive software.

Tight definition & control of load shedding ensures protection of key processes.
How The Process Works

Process of Developing Projects

- Qualify
- Site Audit
- Powerit Proposal
- Check Utility Programs
- Implement
- Confirm & Train
- Project complete
The Opportunity

Take Advantage of *Intelligent* Energy Management

- Intelligent system enables significant cost reductions
- Maintain control over all load actions; protect operations
- Plans that fit your process & meet utility requirements
- Leverage Powerit’s experience to increase your success
- Benefits even the most rigidly constrained facilities
Thank You

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