



## SparaDM® How it works

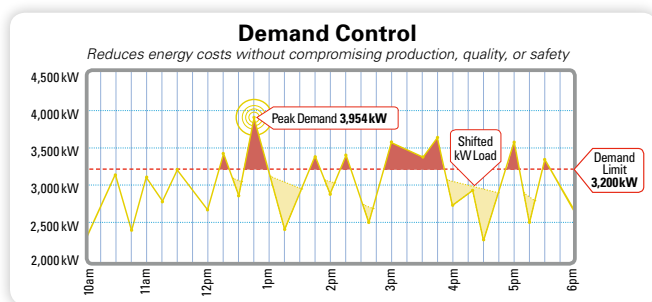
Powerit Solutions' advanced Spara Demand Manager (Spara DM®) continuously coordinates facility energy usage driven by all types of equipment and manages demand for cost savings and efficiency. Our Spara DM technology links industrial facilities with the smart grid so customers can easily optimize energy use for savings and sustainability.

### Savings through Demand Management

Spara DM connects to a broad range of production equipment and ancillary loads to provide full facility demand management. With knowledge of grid status and energy pricing, the system allows you to adjust load control strategies for each demand management application and price level, letting you balance production demands with energy costs. Spara DM supports the following strategies: meaningful peak demand control, demand response participation, and dynamic pricing response.

### How Demand Control Works

Demand Control involves figuring out how and where costly energy spikes occur, then making precisely timed load reductions to avoid those spikes and thereby reduce peak demand charges. Spara DM's settings let you adjust strategies according to how aggressively you want to curtail loads, and ensure that you won't disrupt production. Spara DM makes reductions to control peak demand level based on curtailment rules and conditions, including current stage of the process, type of material, time limits, or when a load was last curtailed.

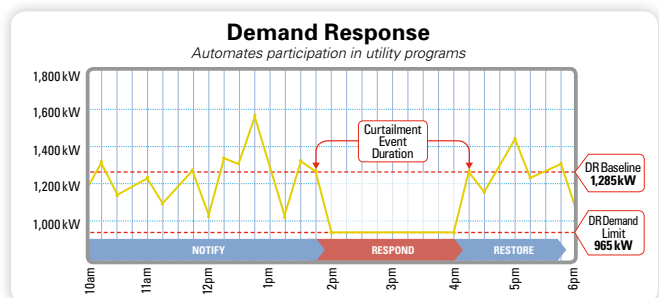


With Spara DM, companies can often shave 10 to 30 percent off their monthly demand charges at the same levels

of production. Some common load shed actions include turning equipment off when there's a process buffer, adjusting temperature setpoints, slowing or shutting down fans, or reducing power to finishing equipment, such as grinders or motors, when it's not needed. Spara DM also controls ancillary equipment, for example turning off battery chargers temporarily when there's a peak in production demand.

### How Demand Response Works

Demand Response (DR) programs let you earn money from your utility, system operator, or through a curtailment service provider by curtailing use for specific durations on demand. Spara DM's advanced technology allows you to participate in the newest generation of automated DR programs.



Manually manipulating complex processes to achieve energy savings is difficult to impossible for most companies. It can also introduce human error and potentially compromise production. In addition, some of the more lucrative DR programs require automated communication between the energy user's and supplier's DR systems via the Internet.

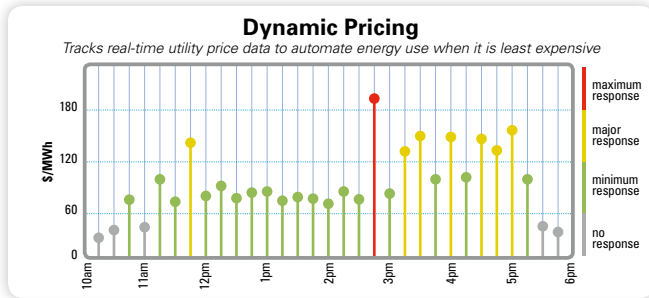
Spara DM communicates with a utility or grid operator's system in real time. Through this dynamic connection, your electricity supplier's system notifies your system of a DR event, and Spara DM takes action according to your rules.

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## How Dynamic Pricing Works

Many utilities and power system operators have rates that can vary by the hour or even by the minute. With these rate structures, the price per kilowatt hour might be attractively low most of the time—but can spike dramatically on short notice.

Spara DM's Dynamic Pricing technology obtains pricing data directly from the utility and integrates it—in real time—into preset load-shedding strategies. The strategies run automatically, and allow you to quickly shift usage to take advantage of lower rate opportunities or minimize charges during rate spikes, all while following rules you set.



## Your Optimal Strategy

Spara DM gives you the ability to precisely control equipment according to the optimal strategy for your facility. For example, in a demand control strategy you could reduce power incrementally to a piece of equipment or process — based on factors such as the process stage or material — knowing the actions prescribed will not affect your productivity. In a Demand Response strategy, you might shut down a piece of equipment entirely for a period of time to earn incentive payments for that event, knowing the shutdown is tightly controlled to ensure that your benefit criteria are met. Doing this manually is next to impossible; Spara DM does it for you.

## Load Connection Strategies Include:

- Analog interfaces for variable reference or potentiometer/rheostat-like control
- Digital control for on/off, increase/decrease modes, Binary Coded Decimal (BCD) input, etc.
- Communication interfaces for microcontroller or PLC-based systems
- Notification stations for manual interruption

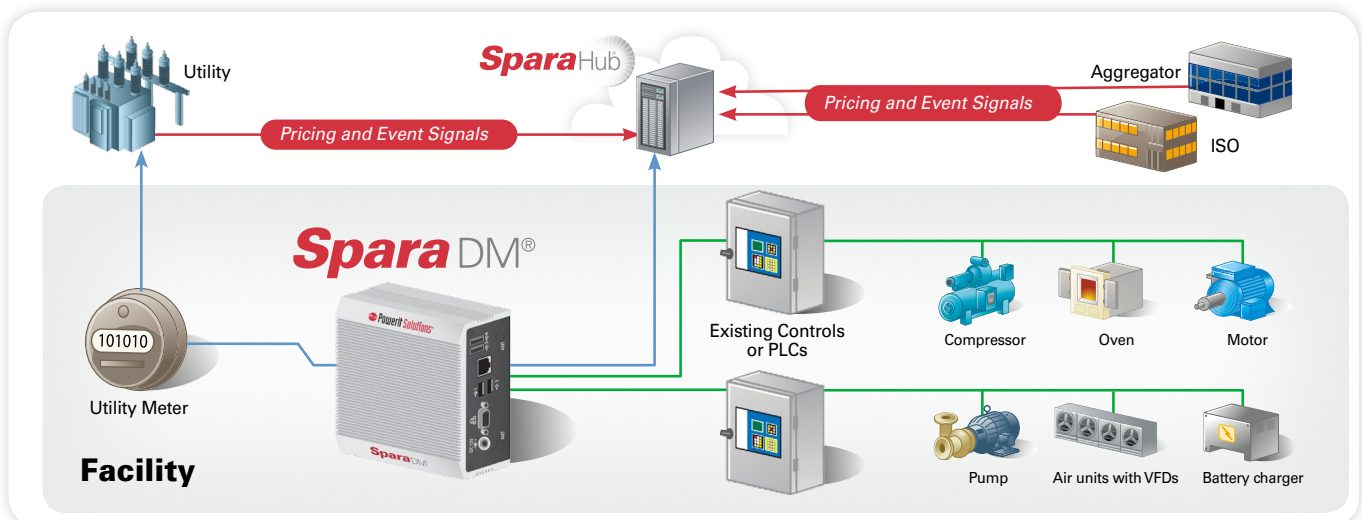
## Frequently Asked Questions

### Q: How is Spara different from my existing automation?

**A:** Spara DM was designed for managing electrical demand in industrial manufacturing facilities, not for general process or load control. And unlike other Demand Control systems or demand management software, Spara DM takes a holistic approach to energy management. Instead of simply controlling certain loads, as some systems do, Spara DM lets you intelligently manage energy demand throughout your facility. Spara DM also lets you stay ahead by incorporating features necessary for participation in the next generation of dynamic pricing and demand response programs.

### Q: How is it possible to reduce energy expenses without negatively affecting production?

**A:** Spara DM works by making precise adjustments to facility demand and rooting out hard-to-find inefficiencies. The system utilizes a strict set of rules that dictate how and when equipment or processes can be adjusted for load shedding. The rules are designed to protect production and will never be broken. Spara DM can prioritize load shedding sequentially, by group, or by factoring in process or facility status, and it can synchronize load shedding to achieve both savings and productivity targets.



- Spara DM interfaces seamlessly with most industrial equipment—chillers, heat-treating ovens, blowers, fans, pumps, and ancillary loads, such as HVAC, battery chargers, and air compressors. Connection strategies include: communication interfaces for microcontroller or PLC-based systems.