POWER MANAGEMENT SYSTEMS LLC

TERAWATT iDR - Intelligent Demand Response Technology

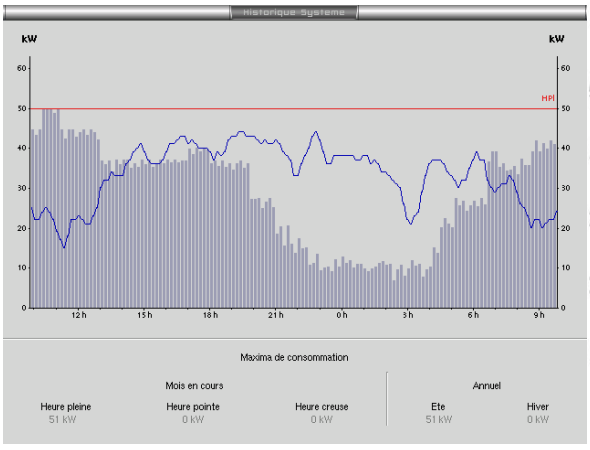
➢ *Principle*

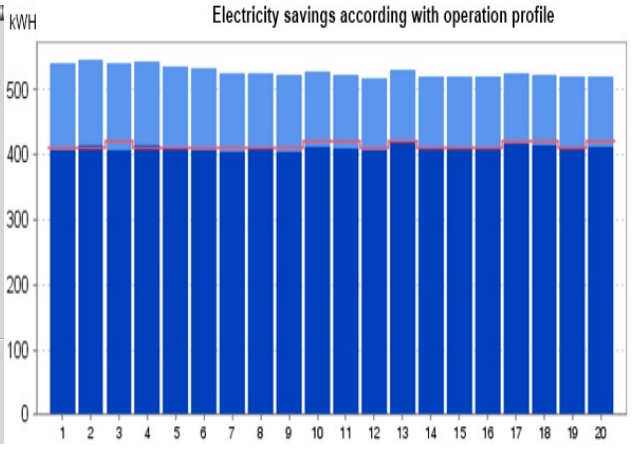
The active electricity usage – kWH in electric installations can be optimized without compromising the design intent of the existing systems, integrity of the equipment or any technical characteristics of the operation. The Terawatt **i**DR technology monitors and manages customer's kWH active electrical consumption 24/7 to a customized base line, thus providing fully documented reports and proven, detailed energy kWH savings and rates. **i**DR is an efficient technology focused on real-time management consumption, controlling the energy usage through a combination of a proprietary hardware and software solution that is fully customized to the physical characteristics of the electrical network/user.

This technology is positioned with the purpose of reducing the active power or electricity usage kWH on facilities throughout an intelligent management of the coefficient of simultaneity/instant power on each 30 minute integration period from utilities thus achieving a lower load shape profile and reducing on a permanent basis (24/7) electricity costs, the carbon footprint and monitoring plants ´energy conservation and sustainability procedures.

➢ *Technology*

With an effective proprietary algorithm, the **i**DR technology is able to generate real-time projections (by the second) of client´s power demand during each consecutive 30 minute period (*integration time used by US utilities to measure the power*) and produce on the network instant management actions or optimization procedures according to a reestablished fully customized load shape profile.

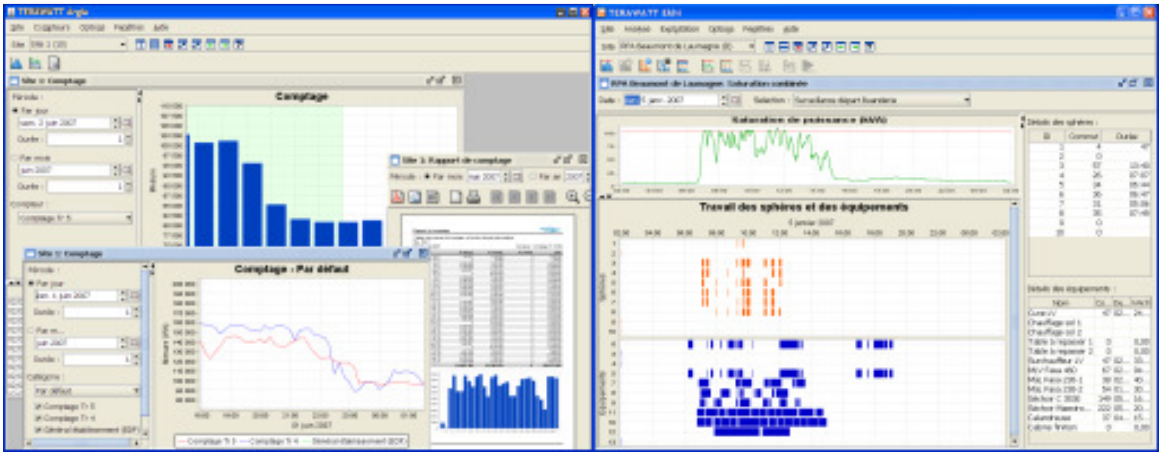




Such dynamic actions vary every 30 minute period since new and diverse conditions of power usage will determine new types of optimization parameters *(different simultaneity coefficient of power demand)*, consequently the **i**DR can manage all type of tariffs (linear tariff, exponential tariff, etc.). At every second the **i**DR system compares its algorithmic predictions with the input demand from meter (*energy measured*) and consequently modifies, in real time, its interface/commutation strategy reshaping the instant power and the coefficient of simultaneity of in progress demand thus lowering the integration value of the ongoing 30 minute interval of measurement, therefore generating savings, a more balanced usage of power with an effective cost reduction and an optimized load shape profile.
The **i**DR system is adapted to all types of metering/tariffs, being a totally transparent, real-time energy optimization that can perform in extreme ambience conditions (+140°F and 99%RH), entirely tailored to the inherent specificities of each operation/user.

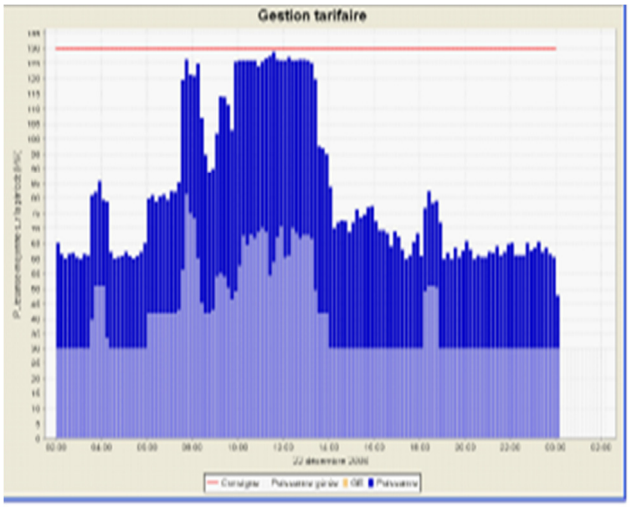
➢ *Software*

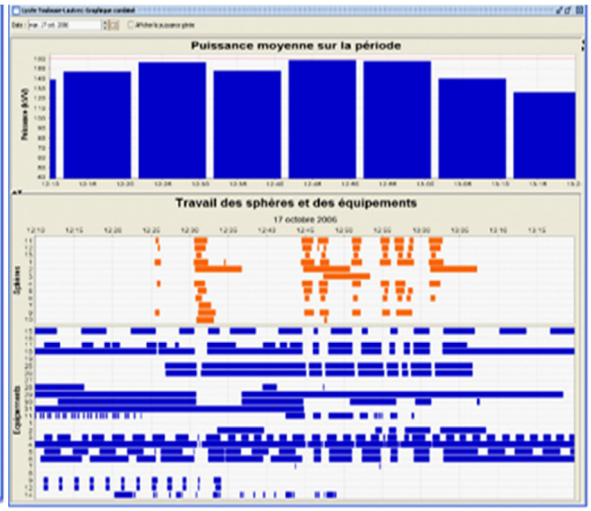
A proprietary software and state-of-the-art programming technology, the Terawatt **i**DR optimizers carry out their multi tasked algorithms much faster than any other system such as Linux, Windows or Mac OS. The patented, copyright protected Sorgin software collects data from the **i**DR system and allows a fully tailored programming for almost all type of facilities, offering real-time monitoring and a detailed user-friendly color touch-screen dashboard with real-time power usage (instant power), complete historical of energy consumption, optimization performance reports and respective savings, equipment managed and complete **i**DR records for analytic purposes on all routine tasks.

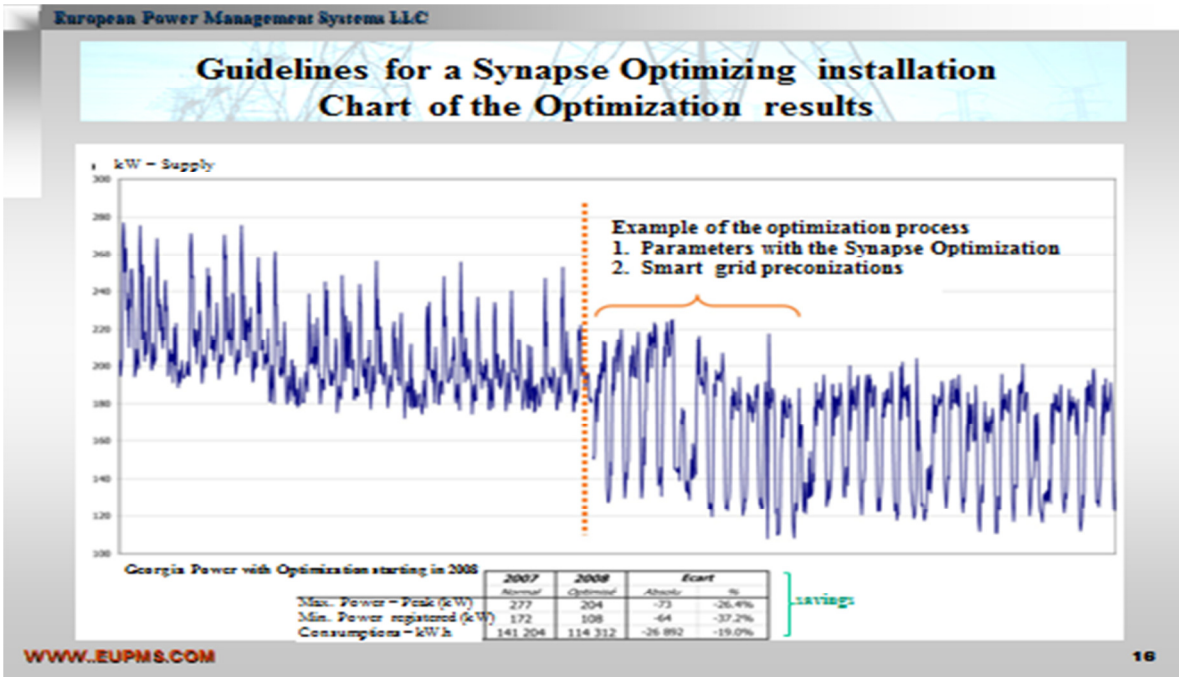


Also featured:

- Real-time temperature recording and monitoring through dynamic graphs
- Real-time fluids usage and monitoring through dynamic graphs
- Real-time interface on programming conditions with external parameters status (Relative humidity, temperature, probe input, etc.)
- Real-time interface on programming status by remote access (TCP/IP, Modem, Intranet)
- Mater-slave technology available
- Remote alarm activation (using GSM technology, LTE Advanced standards)







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Technology Basic Descriptive

The Terawatt optimization or iDR Technology energy savings are derived from the combination of hardware interface and the software technology being installed at any type of electrical infrastructure. The solution reduces energy consumption or electricity usage in kilo-watt-hours (kWh) for the facility by managing the coefficient of simultaneity / instant power during each 30 minute integration period (graph below) that the electric utility meter measures, thus achieving a lower load shape profile during the several measurement intervals per day, that significantly reduces the kWh's. The monthly electric bill will reflect the total kWh reduction in the form of measured kWH's and a resulting lower electrical bill for the current month and all future months on a continuous basis (24/7). In addition, the iDR system collects and reports the monthly energy consumption (kWh), tracks the facility's overall carbon footprint, while monitoring the user's energy profile, efficiency results and sustainability status.

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