Intelligent Demand Response Technology (IDR) - A Sustainability Strategy

Remote Energy Monitoring & Tailored Real-Time Power Optimization Technology
a part of safe and sustainable environment in Facilities

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IDR remote energy monitoring & real-time power optimization is a 24/7 complete automated process, synchronized with utilities metering, that reduces the riskiness and cost of in-person technical activity while assuring facilities sustainability by optimizing the electric load.

Contractually-guaranteed results, in detailed valorized monthly reports, offer a risk-free solution with a ROI in less than a year. Health care leaders should take advantage of this secure and recognized cost-reduction intelligent Demand Response Technology (IDR)

We define remote energy monitoring & real-time power optimization as the set of events that meet four key criteria:

(1) data of energy usage and tailored optimization locally collected by the intelligent Response Technology System

(2) the data collected is retrieved by a central backup secure server;

(3) the data is daily evaluated, and engineering notified, as needed; and

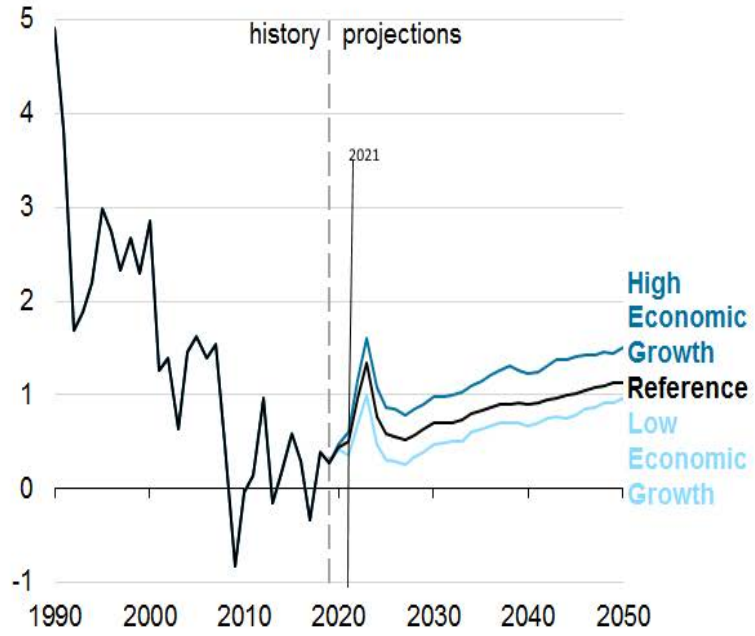
(4) any pre-set alarms communicate relevant data-driven proceedings and eventually required tunings.

Intelligent Demand Response (IDR) remote monitoring & real-time load management technology have performed a significant role in many US facilities, particularly during the Covid-19 pandemic.

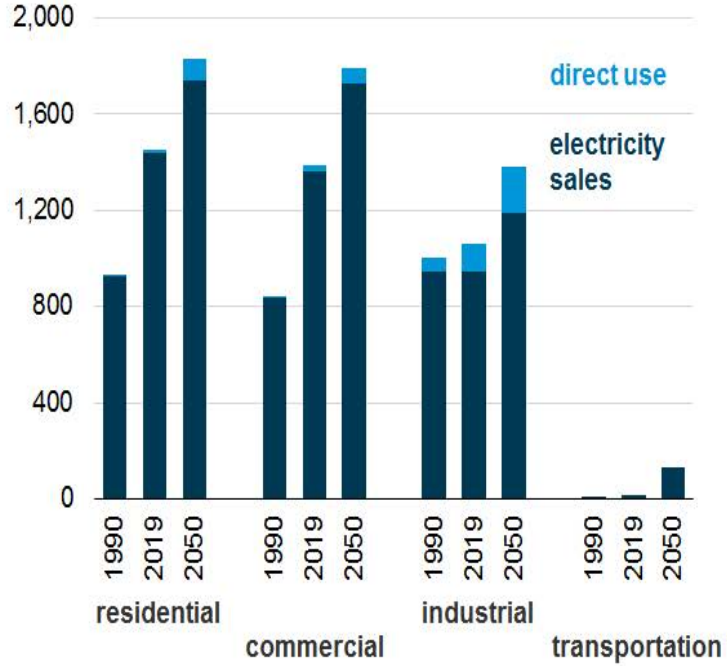
e.g. providers such as St. Mary's Heal Care System in Georgia; Jupiter Medical in Jupiter West Pam Beach, Florida; St. Francis Hospital, Trinity Health New England Hartford, Connecticut, among many other facilities that **started their energy saving programs before the Covid-19 have now the advantage of an entirely automated, tailored, cost-savings solution** that simultaneously assesses and manages the status of facilities carbon footprint while increasing sustainability by rationally using energy resources

US electric power utilities face exceptional burden to modify their business model due to new technological requirements, safety issues, more penalizing regulations, changes in consumer needs, demand growth and increasing environmental concerns. US energy consumption continues to grow throughout the projection period (2050) as energy efficiency continues to endure, achieving better environmental outcomes

AEO2020 Electricity use growth rate
percentage growth (three-year rolling average)



Electricity use by end-use sector (AEO2020 Reference case)
billion kilowatthours



Source: US Energy Information Administration

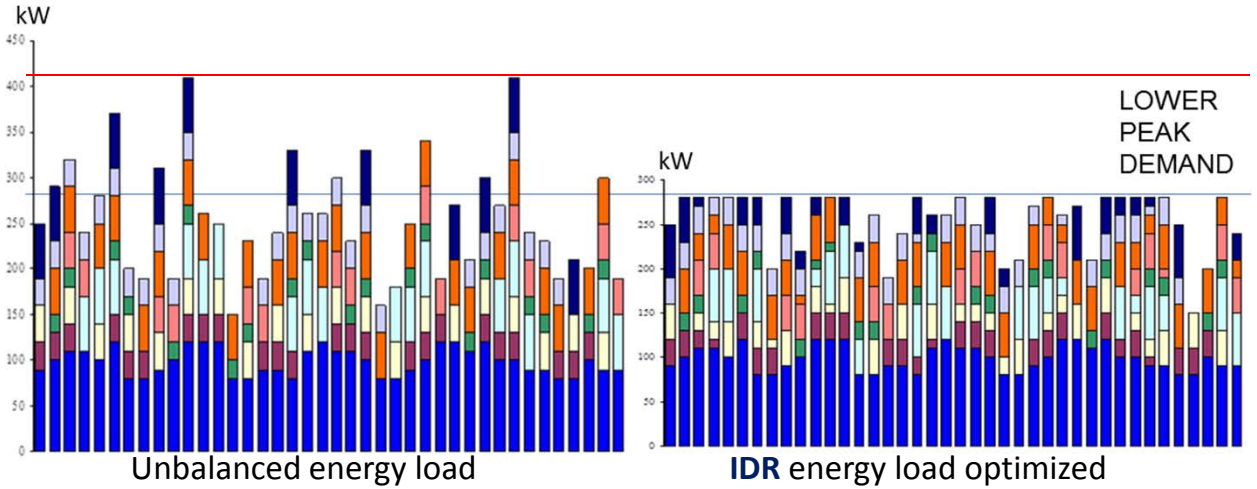
Sustainability generating sources, like the IDR-intelligent demand response technology, are particularly critical at a time when hospitals are struggling financially due to the important amount of revenue they have lost from pandemic related cancellations and delays. The balance between spending and saving, boosting competitiveness, **calls for smart technology investments with fast and assured return**.

Covid-19 has produced circumstances to accelerate the adoption of intelligent technologies, automated processes enhanced with remote access.

We continue to encourage decision makers to act resolutely in establishing competent energy-saving programs by considering advanced systems, high-tech solutions that will last far beyond the current crisis while meeting environmental compliance in a more challenging and demanding energy market

Elevator pitch – IDR Technology

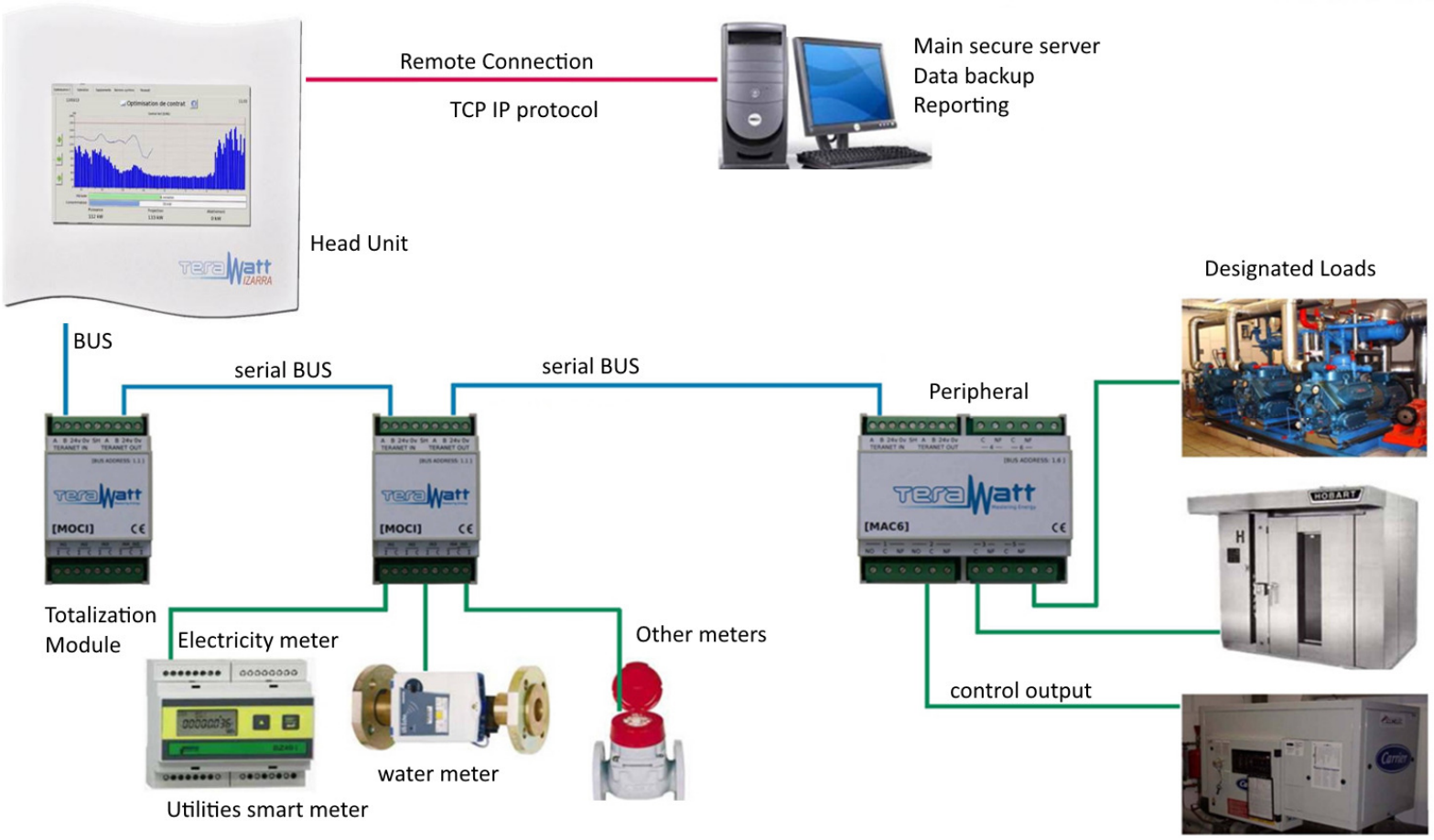
A proprietary hardware-software solution that real-time reduces electricity usage (kWh) and demand (kW), using a tailored, fully automated predictive-adaptive algorithm, synchronized with utilities smart meter integration cycles, streamlining the coefficient of simultaneity on demand (*), optimizing designated electrical loads (equipment) in documented, valorized, performance-tracking monthly reports, without impacting operation design intend.



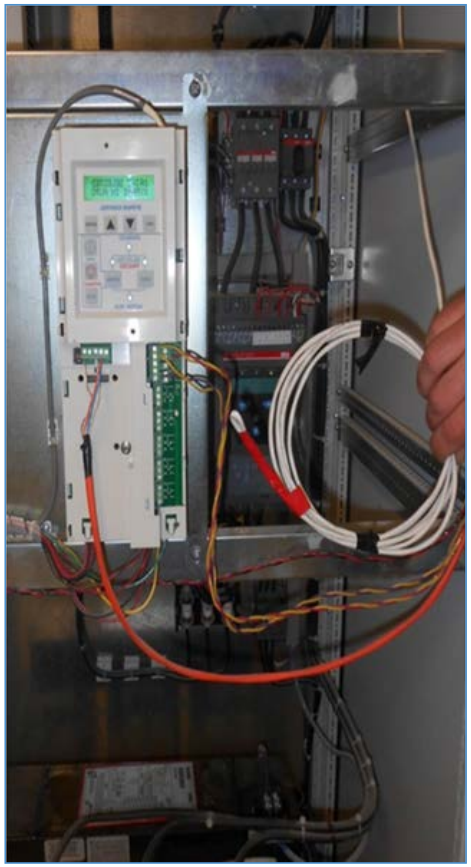
Savings:
in demand kW
and
in kWh, usage
or consumption

(*) when 2 or more events occur at the same time in a frame of reference, producing a power spike

IDR Technology Architecture



IDR Technology Architecture



Case-studies

- St. Mary's Hospital Athens, Georgia
- St. Francis Hospital, Trinity Health New England Hartford, Connecticut
- Good Samaritan Hospital, Greensboro, Georgia
- Sacred Heart Hospital, Lavonia, Georgia
- Jupiter Medical Center, Jupiter, Florida

Case-study

St. Mary's Hospital Athens, Georgia

- Annual kWh off-set: 2,300,000
- Total equipment optimized: 52
- Annual CO2 tons off-set: 1,656
- Annual cost-savings: $110,000
- ROI: less than 1 Year
- Execution time: 3 weeks - no down time

Case-study

St. Francis Hospital, Trinity Health New England Hartford, Connecticut

- Annual kWh off-set: 501,048
- Total equipment optimized: 61
- Annual CO2 tons off-set: 361
- Annual cost-savings: $122,138
- ROI: less than 1 Year
- Execution time: 5 weeks - no down time

Deregulated electricity market

Case-study

Good Samaritan Hospital, Greensboro, Georgia

- Annual kWh off-set: 553,775
- Total equipment optimized: 28
- Annual CO2 tons off-set: 300
- Annual cost-savings: $24,000
- ROI: less than 1 Year
- Execution time: 3 weeks - no down time

Case-study

Sacred Heart Hospital, Lavonia, Georgia

- Annual kWh off-set: 589,632
- Total equipment optimized: 27
- Annual CO2 tons off-set: 425
- Annual cost-savings: $35,791
- ROI: less than 1 Year
- Execution time: 2 weeks - no down time

Case-study

Jupiter Medical Center, Jupiter, Florida

- Annual kWh off-set: 841,522
- Total equipment optimized: 19
- Annual CO2 tons off-set: 606
- Annual cost-savings: $81,162
- ROI: less than 1 Year
- Execution time: 3 weeks - no down time

IDR Projects Highlights

- Proven technology, risk-free investment, cost-effective solution, ROI below one year;
- Complimentary projects;
- Entirely automated technology performing 24/7 tailored optimization profile;
- Performance-tracking reporting with real-time hourly results;
- Auto-regulated for several personalized protocols;
- Secured remote and local access interface on a touch screen monitor;
- Interface options for Distributed Generation platforms, EMS, Modbus and Scada;
- Real-time monitoring and recording of all type of fluids (e.g. temperature, water, gas);
- Smart Grid compatible with fully automated programmable protocols;
- Automated ATS commutation Utility grid / Emergency grid, optimization on both network;
- Compliance with energy regulations and support the negotiation of better rate plans;
- Identifies billing errors, providing accurate records on kWh and kW to eventual assessments;

- Project insurance of two million dollars;
- Full guarantee, parts and labor, during ROI period;
- Projects comprises all costs related with programming and equipment termination, Terawatt´s proprietary software rights of use;
- Electric load monitoring & analysis during the warranty period;
- Training and 24/7 technical support;
- Periodical software upgrades;
- Certified engineering coordination during installation;
- Certified contractor for the selected equipment termination;
- Excluded the communication BUS installation (*Carol 18 AWG E20385 18.10 multi conductor cable)* to be executed by the customer's technicians or designated local contractor;
- An extended service guarantee is available with an annual cost of 10% of the project cost;