



**SPARKS
DYNAMICS**

VIRTUALLY ANALYZING CHANGE

**Smart Systems that Monitor and Manage
Energy, Security and Equipment Status**

- ◆ On-Site Audits
- ◆ Remote Monitoring
- ◆ Energy Management
- ◆ Thermal Imaging
- ◆ System Integration
- ◆ Project Management
- ◆ Financing

Meet Our Management Team

- 30 years of military and business leadership experience developing innovative organizations.
- President of axonX, the leading supplier of video flame and smoke detection technology.
- CEO of Mottley Enterprises, one of Ingersoll-Rand's largest distributors.
- President of the Assoc. of Ingersoll Rand Distributors
- Founding board member of the Dept. of Energy's Compressed Air Challenge Initiative.
- Certified Energy Manager through the Association of Energy Engineers.
- Distinguished graduate (top 5%) from the United States Military Academy at West Point with a BS in engineering
- Fellowship and MBA from the Smith School of Business at the University of Maryland.



Mac Mottley, CEO

- Recognized expert in the fields of remote monitoring software as well as artificial intelligence relating to data analytics and video/ thermal imaging.
- CTO and founder of axonX Fike where he developed the SigniFire video detection algorithms for flame and smoke.
- Founder of Applied Thermodynamics LLC, where he designed the hardware, control, and analysis software for Nano-DSP Differential Scanning Calorimeters.
- Award winning innovator (Wall Street Journal, Frost & Sullivan) for patented algorithms that include digital signal processing, pattern recognition, and neural network development.
- Master's degree in Electrical Engineering from Moscow's Institute of Electronics and Mathematics
- PhD in Bio-physics from Johns Hopkins University.



George Privalov, Ph.D., CTO

Know your Compressed Air System Control Your Expenses

Industrial Compressed Air Systems can be one of the most inefficient systems in the typical Industrial Plant

50% of the energy used to compress air can be going to waste through leakage, misapplications and artificial demand.

14% of the typical electric load for a plant is used in the compressor room, a sizeable expense but also an opportunity for savings. With the advent of our advanced technology there is no such thing as “not knowing” or having enough information to make expense saving decisions for your organization. An energy assessment by our experts will provide a comprehensive picture of your current energy profile. It identifies all areas of consumption and why compressed air is wasted.

Inefficiency becomes obvious with a professionally analyzed profile as detailed in our reporting and sets the stage for proposed improvements – improvements that save energy and money.

Energy Efficiency in your facility is just good business anymore. We arm you with the knowledge to take action and can even manage plan implementation for you. We offer complete turn-key solutions as well as source reduction strategies and audits.

Sparks Dynamic's ReMaster System

- Industrial SCADA System
- Modbus Communication
- Energy, Flow, Pressure, Temperature
- Thermal Imaging & Vibration Inputs Optional
- Collects and Pushes Data to Sparks Cloud
- ViewMaster Allows Web Based Access to Data Sets 24/7
- Data Analytics Alert User to System Anomalies

REMASTER



Use our Process to Increase your Profitability



Baseline

Establish a baseline by installing monitoring equipment that connects to our ReMaster Data Collection System. We then conduct a system audit to understand your site's existing conditions and operations.

Optimize

System data is then analyzed to determine inefficiencies and areas for optimization. We'll then propose energy efficiency projects, upgrades and enhancements that will save you money.

Implement

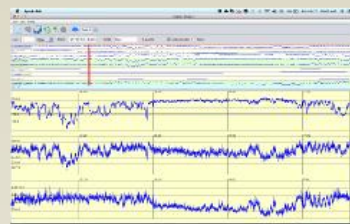
Sparks Dynamics will oversee the implementation and management of your project from start to finish. From writing custom control software to equipment procurement to financing—we can assist you to get the project done.

Verify

Once your system is in place we can track real time data to keep your site running as efficiently as possible in the established performance envelope. System alarms and alerts can be sent by email or text.



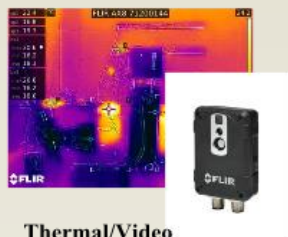
Utility Room



Data Collection and Analytics for Anomaly Recognition



Cloud Servers



Thermal/Video Camera

Thermography



ReMASTER Data Collection System



Vibration Monitoring



Sparks Cloud



Monitoring



Tech Support



Factory Manager

Data

Data

Alerts

Alert

Recommended
Corrective
Action

Take Advantage of Utility Rebates

Utilities are offering substantial rebates for implementing energy conservation measures. **Many utility programs including BGE, Pepco and Delmarva Power will rebate up to half the cost of a custom engineered project** such as a **ReMASTER System** with leak management and control modifications to accelerate the payback period.

Example Project:

- ♦ ReMaster Cloud Based Monitoring of System Parameters—
KW, Flow, Pressure, Temperature
- ♦ Automated Fault Detection & Diagnostics
- ♦ Leak Management Program
- ♦ Demand Side Controls with Automated Valves
- ♦ Enhanced Compressor Control System Pressure Reduction



Energy Conservation Measures save 150,000 kwh per year, approximately \$15,000

Project Cost- \$50,000 / Simple Payback 3.3 Years

Utility Rebate- \$25,000 / New Simple Payback 1.67 Years

Utilities are charging their customers each and every month to finance energy efficiency projects.

Fund Projects through Energy Efficiency Finance Programs and receive immediate positive cash flow!

Get your money back!

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