



Predictive Energy

Powered by ATOMITON STACK

Achieve sustainability goals while reducing operational costs

An AI-Powered engine that turns machine data into energy saving actions in real-time

Towards Energy Efficient Manufacturing

In 2019, the industrial sectors were responsible for 30% of the total U.S. greenhouse gas (GHG) emissions, equivalent to the combined amount generated by the residential and commercial sectors. Globally, increasing urgency is given by world leaders and responsible corporations to take decisive actions to mitigate global warming. Many companies have set their Net Zero goals between 2025 and 2050.

Energy is one of the highest operational costs for industrial manufacturers, contributing to 10- 40% of the variable production costs. Inefficient energy consumption patterns waste millions of dollars, which could have contributed significantly to the bottom line.

Energy Optimization Challenges

McKinsey estimates that 10-30% energy efficiency gain is readily achievable for the industrial sectors. But the lack of real-time actionable insights prevents companies from capturing such savings opportunities. Given the dynamic nature of the industrial processes, understanding the energy impacts of alternative operational decisions is impossible without real-time analytics. Operators often perform their tasks based on established routines from their past experience, instead of considering energy cost as an important part of the equation.

Solution Highlights

Atomiton’s AI-powered engine provides real-time optimization intelligence for operators to make energy-smart decisions, driving down energy costs and carbon emissions.

Figure-1. Operational Spending on Energy

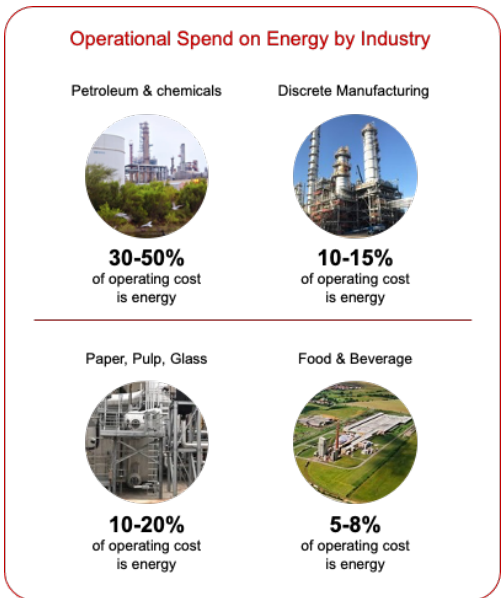
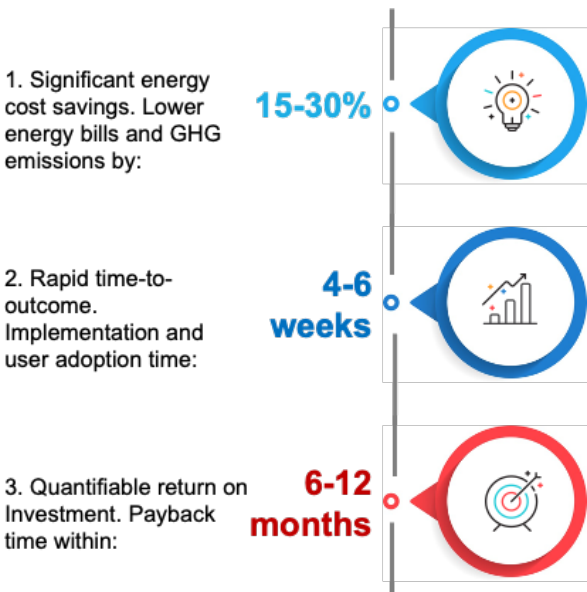


Figure-2. Predictive Energy Advantages



Who Can Benefit

Chemical Plants
Oil & Gas Facilities



Food & Beverage
Pharmaceutical Production



Industrial/ Municipal
Chilling & Cooling



Paper & Pulp Production
Glass and Metals



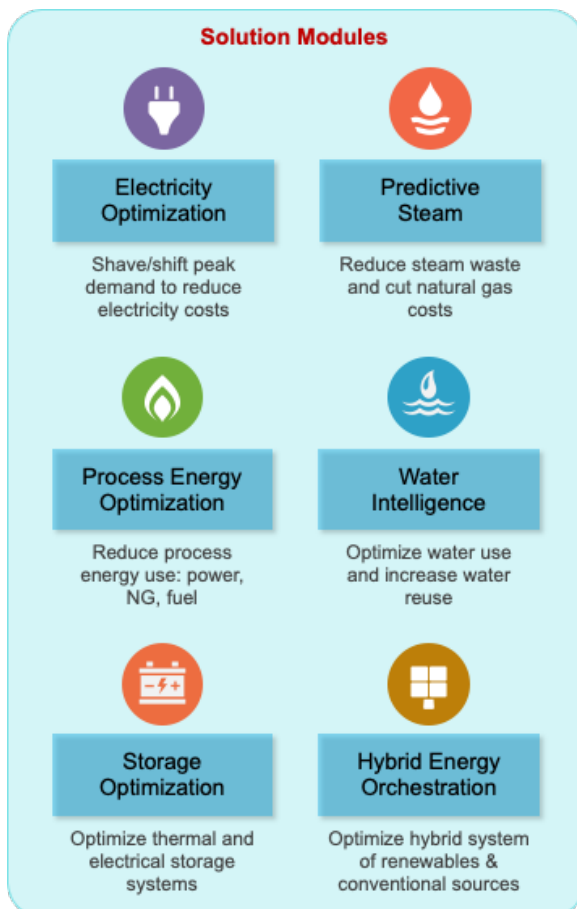
Adopting Renewable
Energy; Battery & Storage



Solution Components

A core component of the Atomiton Stack is predictive analytics – predicting the energy demand and identifying optimized way to run energy-consuming machines while meeting the production demand. The solution contains multiple modules for different primary and secondary energy forms.

Figure-3. Predictive Energy Modules



Solution Benefits

- ✓ Reduce energy costs by 15-30%
- ✓ Cut GHG emissions by 10- 20%
- ✓ Improve asset performance with early detection of asset degradations
- ✓ Increase process visibility and staff productivity
- ✓ Meet ESG goals; providing environmental benchmarks to customers and stakeholders

Figure-4. Screen Capture of Predictive Steam Module



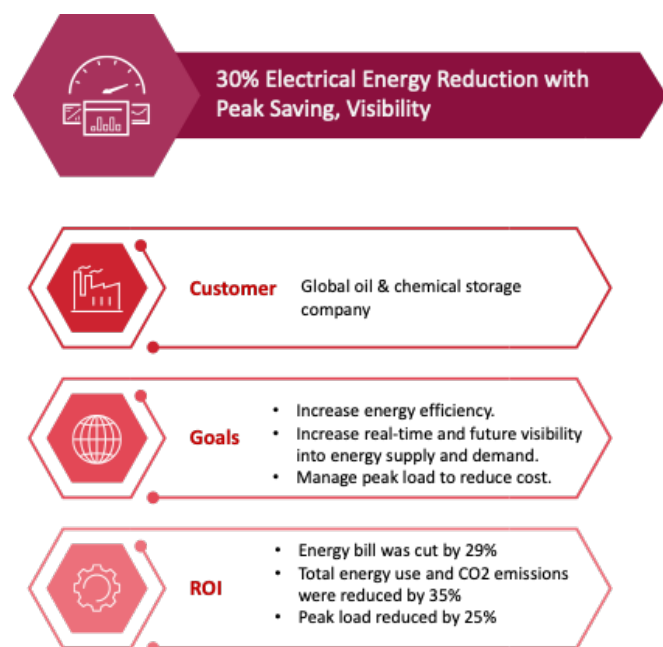
Figure-5. Adding Efficiency to Operations



Energy is the backbone of industrial productions. The Atomiton engine not only leads to direct energy savings, but also helps make operational processes more efficient.



Case Study 1



Key to Success

On a weekly basis, this operation runs up to four to five thousand machine activities to manage the conditions of its various liquid products, including chemicals, edible oils and petroleum products. Rather than make trigger-based setpoint decisions, Predictive Energy algorithms identifies activities that have flexible start times and computes the best timing and sequence to reduce the highest energy load on the system.

The algorithms also analyze and predict process lead times, such as the time needed to heat pipes, so that the pre-heating activities can be started only when needed.

Case Study 2

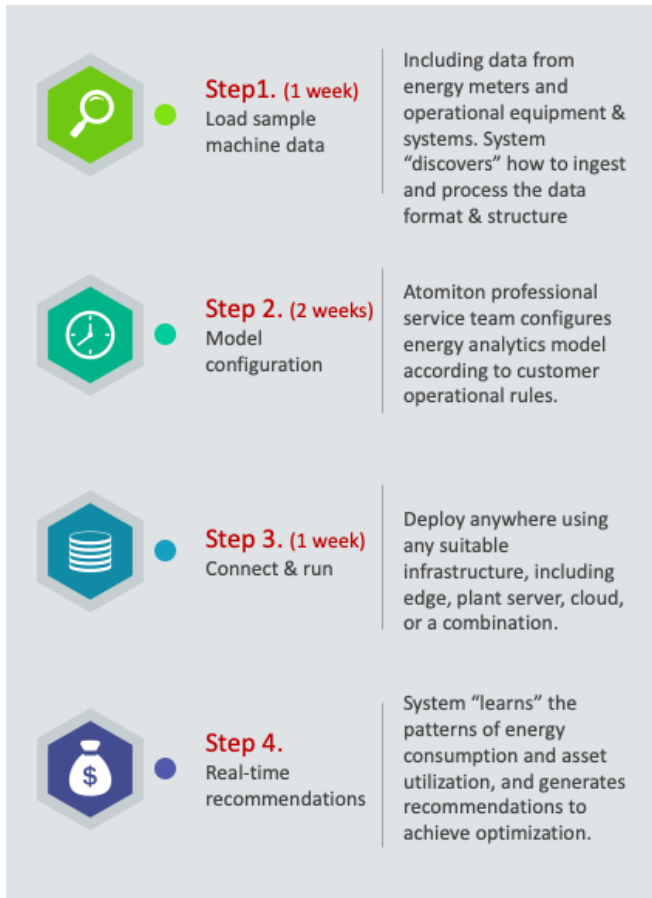


Key to Success

Steam is a use-it-or-lose-it energy resource. Most operators generate steam at preset pressures to meet production needs at different times. Because actual production demand and weather condition constantly fluctuate, the true demand for steam changes too, leading to peak and troughs of the actual steam pressure, and as a result surplus steam going to waste.

The Atomiton Stack predicts the true demand of steam with significant lead time to allow proactive regulations of steam generation set points, smoothing out peaks and reducing wastes. It also optimizes multiple boiler schedules to maximize system energy efficiency.

How Does It Work



About Atomiton

Atomiton is a leading industrial analytics company delivering AI-based optimization for dynamic production environments. The Atomiton Stack allows industrial operators to leverage massive, real-time machine generated data without the need for manual data cleansing and modeling. Atomiton drives actionable insights that lead to substantial operational efficiencies such as energy cost savings.

About Red Hat Open Shift

Red Hat OpenShift is the leading enterprise Kubernetes platform; a security-focused, consistent foundation to deliver applications anywhere, in the cloud or in the datacenter. With Red Hat OpenShift, innovators can focus on what matters, stay competitive, and outpace continually rising customer expectations. OpenShift benefits applications with container-based portability and scalability.

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