Building Resilience with Energy Management for Manufacturing

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AGENDA

1. Why Energy Management?
2. Energy Management for Manufacturing
3. A Unified Sustainability Solution for
    - Buildings
    - Data Centers
    - Factories
4. How Does it Work?
5. Value Add for Customers
6. References, Collaterals

Why Energy Management?

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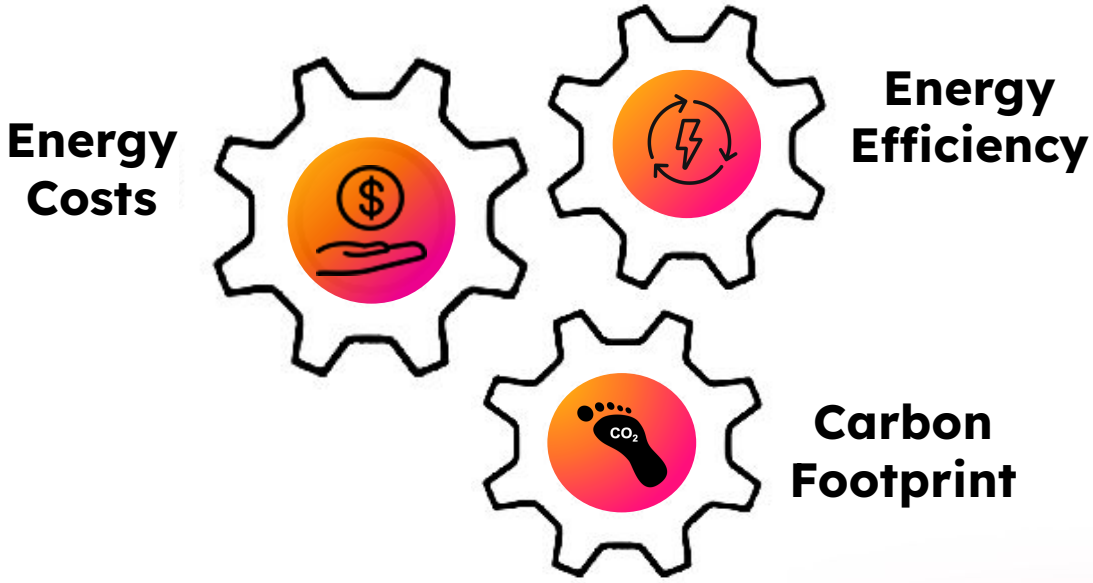
Energy Management is key to building resilience

Three interlinked metrics address key priorities of organizations



New compliance drivers for energy management

Data requirements for reporting and optimization at scale

EU Corporate Sustainability Reporting Directive

EU Energy Efficiency Directive

EU Energy Performance of Buildings Directive

International Sustainability Standards Board

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New regulations and exploding energy costs drive energy management and sustainability observability

Organizations need to have unified, granular data, not just for reporting but for optimization at scale

EU Corporate Sustainability Reporting Directive (CSRD)

- In place since Jan. 2024 for large public-interest companies with 500+ employees
- Sustainability reports need to be audited independently
- Mandatory public disclosure under a common European Sustainability framework (ESRS)
- Nearly 50,000 EU companies are affected
- Starting in 2025, CSRD will mandate plans to reach net zero by 2050
- Fines in Germany: €10M or 5 % of the company's total annual turnover

EU Energy Efficiency Directive (EED), focus on industrials and Data Centers

- Energy management systems are a mandatory requirement for large industrial energy consumers to monitor and optimise their energy efficiency
- Mandatory public reporting
- For data centers, directive comes into force Sept 2024
- Note: 11M EUR is the yearly average energy cost of a German data center
- Forecasts point to a 50% increase of the power footprint of data centers by 2025
- Fines in Germany: Up to €100K

EU Energy Performance of Buildings Directive

- Nearly-zero energy + zero-emission buildings from 2028
- Fully decarbonised building stock by 2050

Intl. Sustainability Standards Board (ISSB)

- Global standards for sustainability and climate-related reporting
- In place since Jan 2024

Energy Management For Manufacturing

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Specific Priorities per Industry

	Manufacturing Automotive Energy & Utilities	Financial Services	Public Sector	Retail	Telecom	Healthcare
Buildings	X	X	X	X	X	X
Data Centers	X	X	X		X	
Factories	X			X		X

Energy Management is Top of Mind for Manufacturing

Rising Energy Costs

- Rising energy costs is one of the top 3 concerns in Europe*
- Renewable energy is also a cost factor

*Source: ABB

High Carbon Footprint

- About 20% share** on overall CO2 emissions both in the US and Europe
- Significant CO2 reduction targets

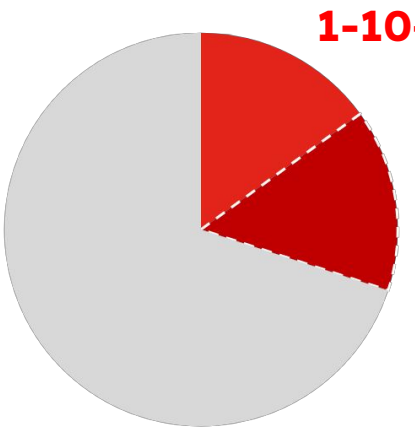
**Source: WEF

Increasing Sustainability Regulations

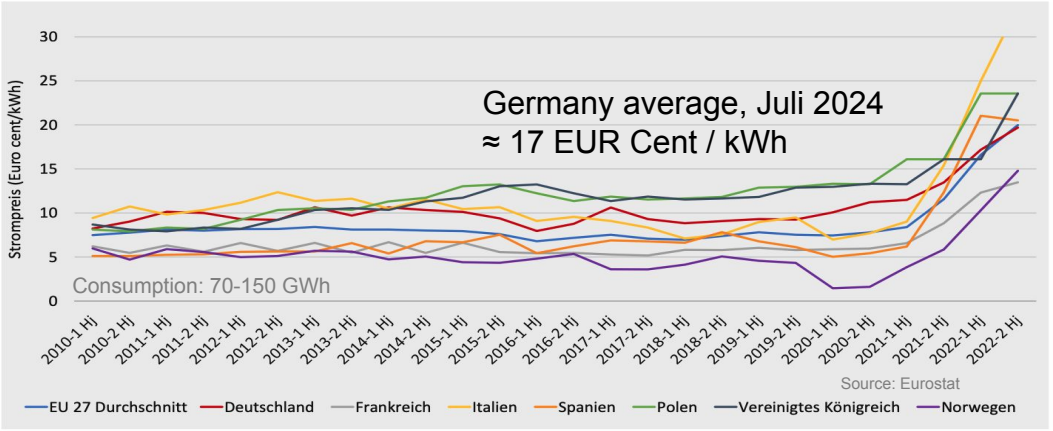
- EU CSRD: Mandatory reporting
- EU EED: Mandatory energy management
- EU Energy Performance of Buildings Dir: Fully decarbonised building stock by 2050
- Global ISSB: Standards for reporting

Energy Management is Top of Mind for Manufacturing

Average share of energy costs on total production costs in EU



High and rising electricity costs for manufacturers



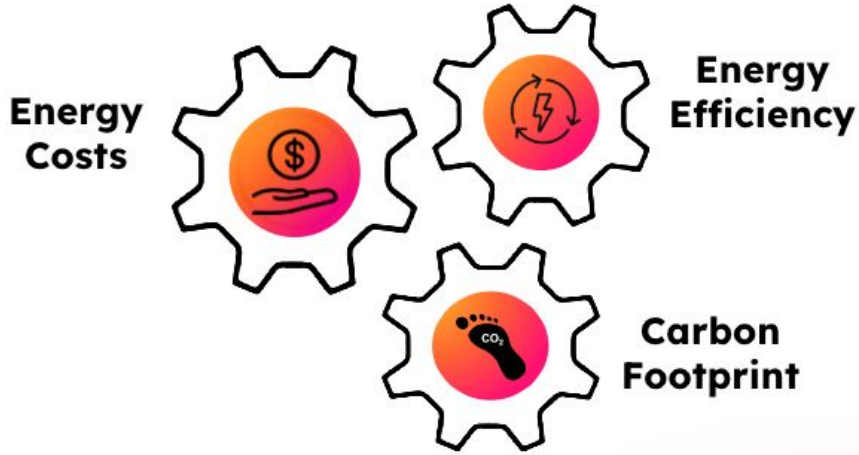
Germany	Price / kWh	Consumption	Cost / Year
Steel	7.89 cents	4,500 GWh	355 MEUR
Cement	12.43 cents	400 GWh	50 MEUR

YOU CAN'T

MANAGE

WHAT YOU CAN'T

MEASURE



A Unified Sustainability Solution

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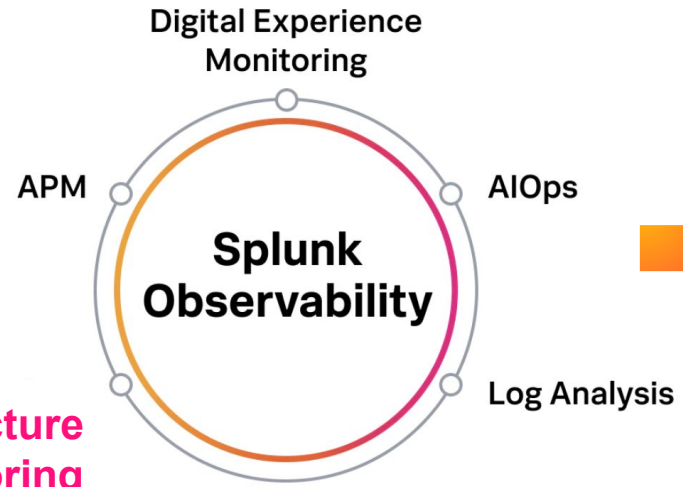
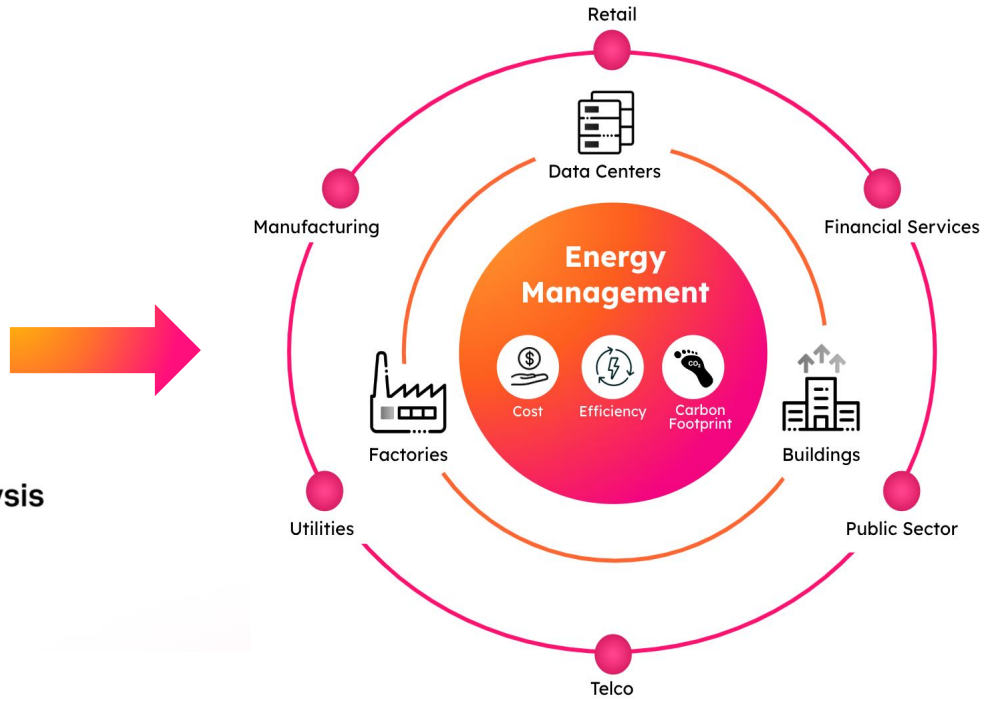
Unlocking a Key Observability Use Case

Energy Management for Industries



Infrastructure Monitoring IT + OT

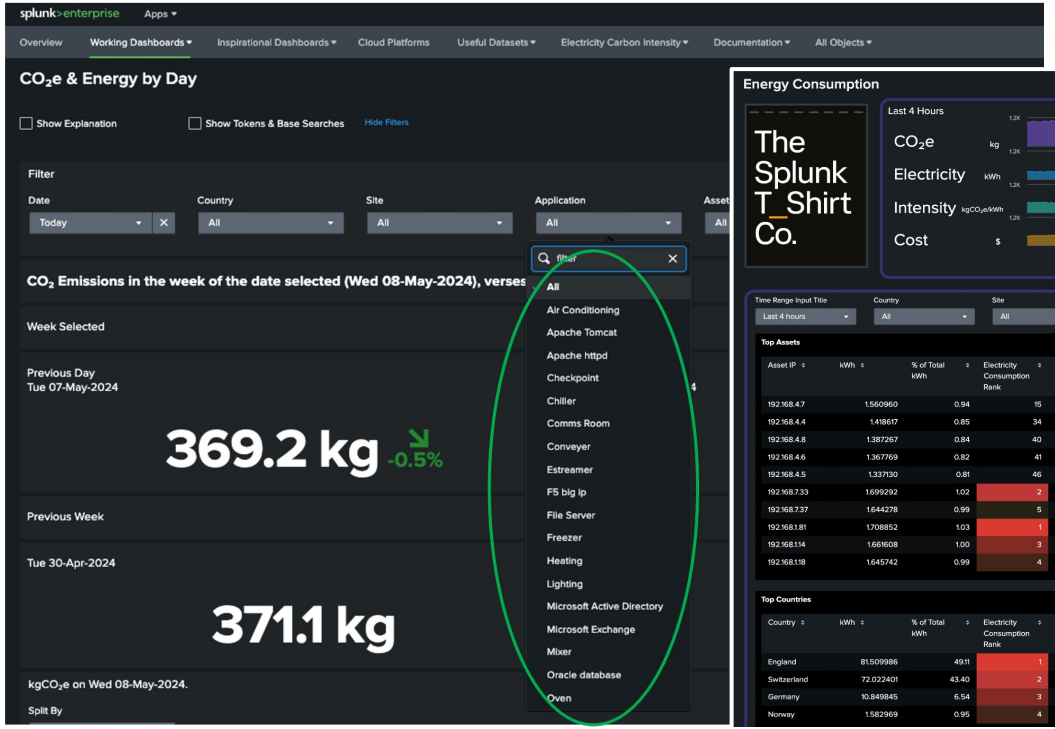


Unified Sustainability Solution

Across

- Buildings
- Data Centers
- Factories

Unified, granular, vendor agnostic and real-time visibility across key applications and hardware devices



How Does It Work?

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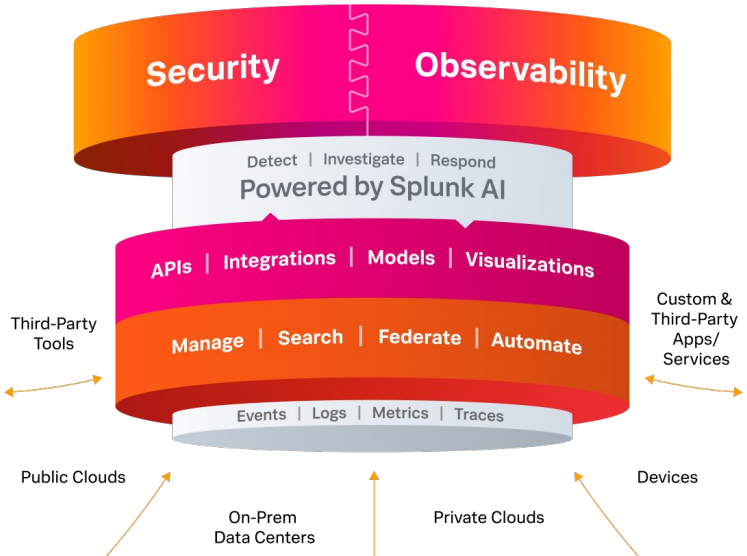
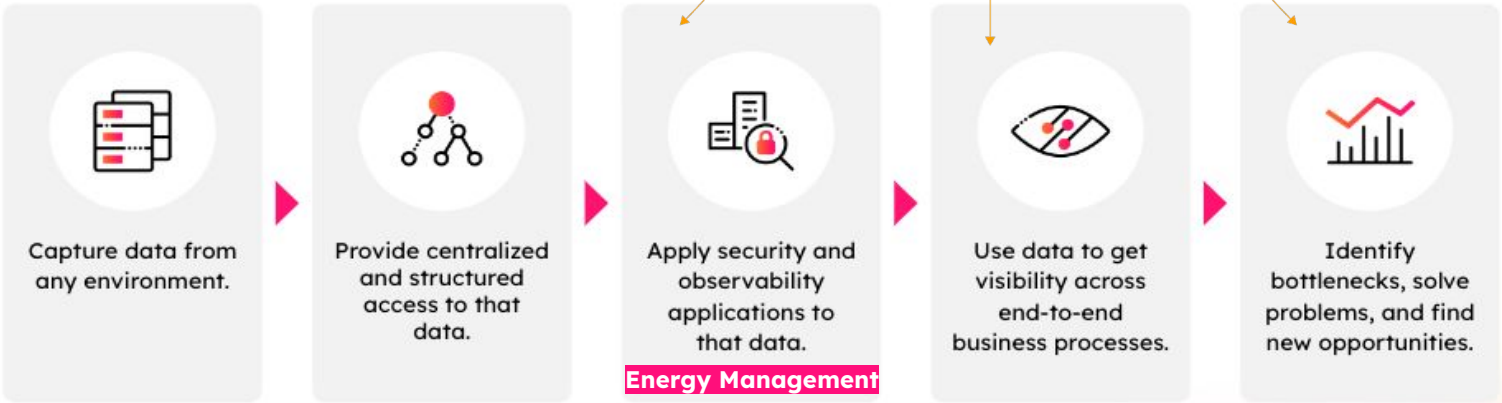
Splunk: The Unified Security and Observability Platform

How does it work?





Energy Management is a data problem

Understanding energy data sources for unified visibility

Data Centers

Network Devices - Cisco + others

Edge Hub

Electricity Maps

Compute & Storage

- API (Redfish, vendor specific)
- Otel

Data Center Infrastructure

- Server Rack
- HVAC
- PDU
- Meter
- Building Management System (BMS)
- Uninterruptible power supply (UPS)
- Data Center Infrastructure Management (DCIM)

VMs / Containers

Buildings

Network Devices - Cisco + others

Edge Hub

Electricity Maps

Building Systems

- HVAC
- BMS
- Meter

Edge Devices / OT / IoT

- PLCs, SCADA systems
- Sensors

Laptops

Onsite Data Center

- Compute, Storage servers
- UPS

Office Equipment
(monitors, printers)

Factories

Network Devices - Cisco + others

Edge Hub

Electricity Maps

Edge Devices / OT / IoT

- PLCs, SCADA systems
- Sensors

Meters

Laptops, servers

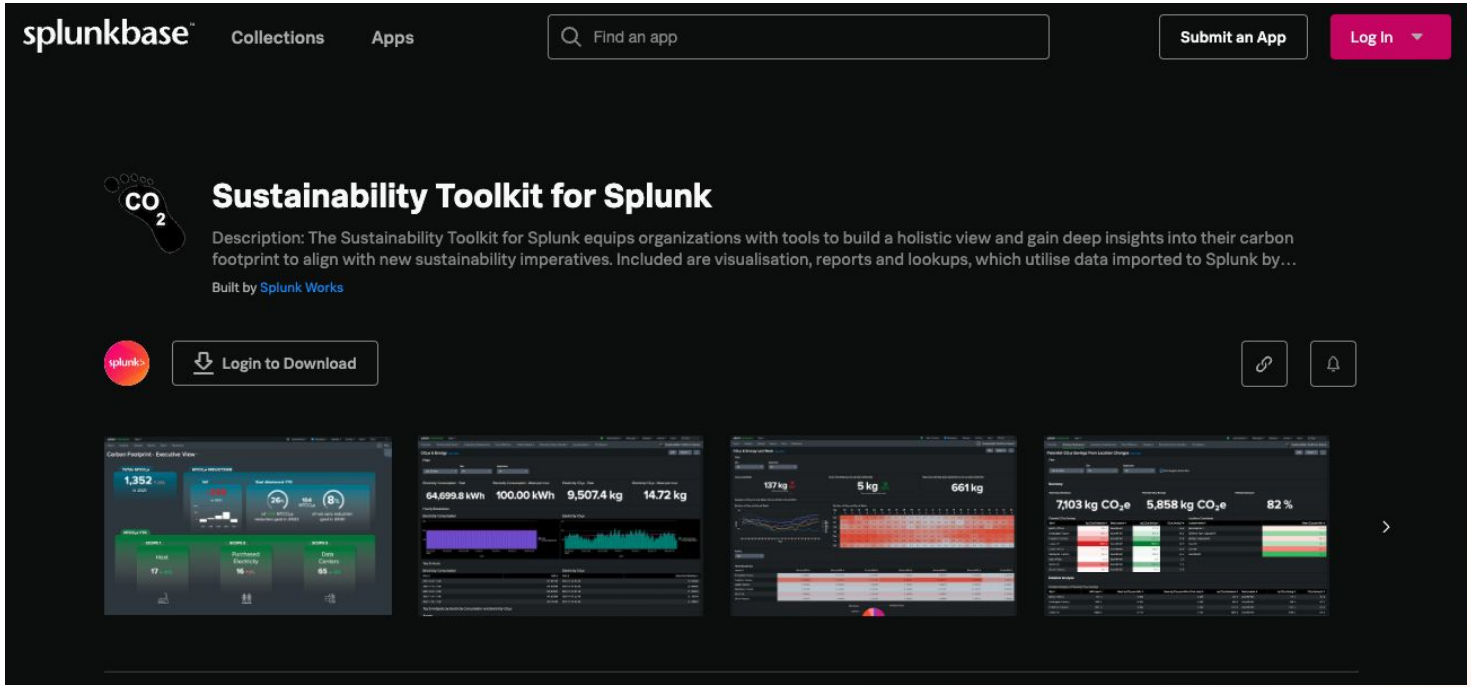
Onsite Data Center

- Compute, Storage servers
- UPS

Building Systems

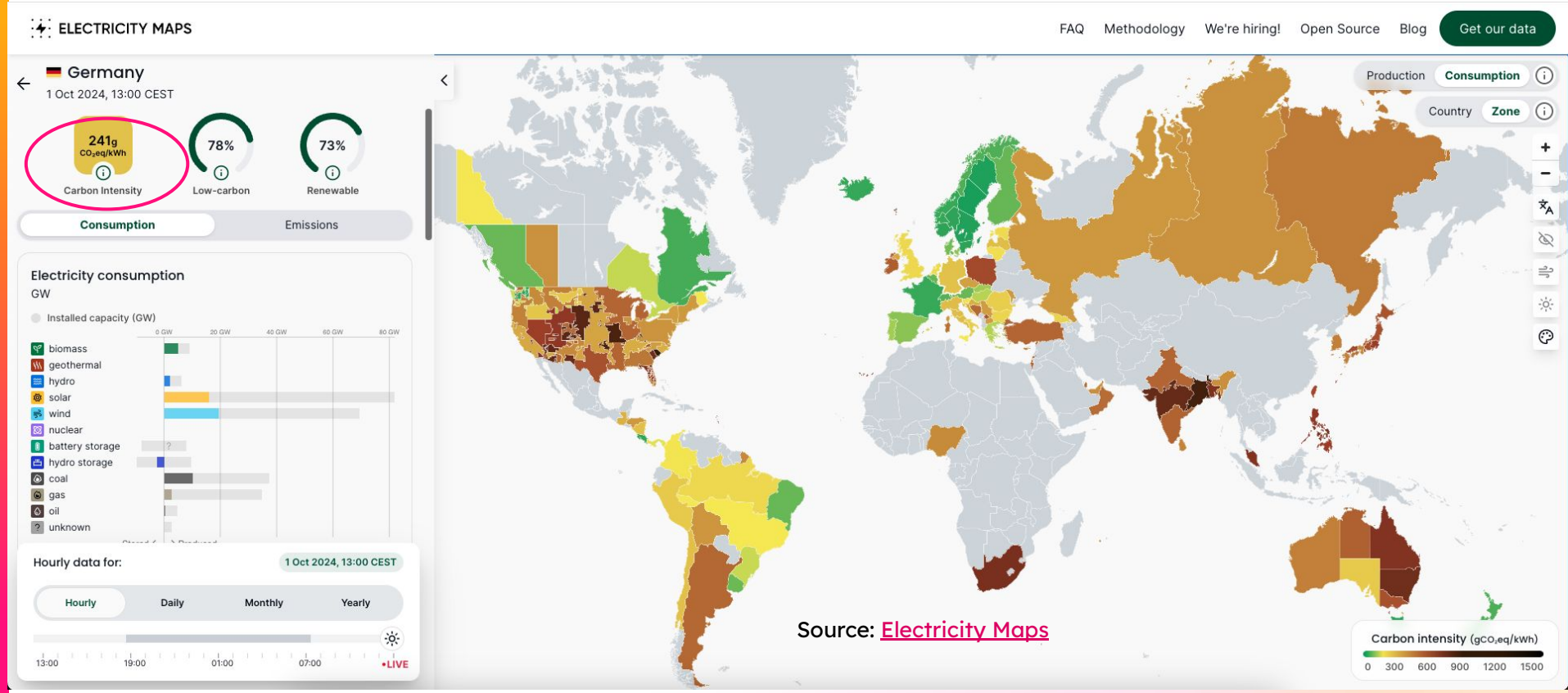
- HVAC
- BMS
- Meter

Leveraging the Splunk Sustainability Toolkit



App on Splunkbase https://splunkbase.splunk.com/app/6343/

Leveraging Electricity Maps



Source: Electricity Maps

Value Add For Customers

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Value Add for Customers

ONE unified solution for energy management with customizable visualizations, metrics, business and technical KPIs

Vendor agnostic data ingestion and analytics

Inbuilt AI/Machine Learning for detecting outliers, forecasting, clustering and recommendations

Business Impact

Unified, real-time, granular visibility

+

Optimizations at scale

through relevant correlations and KPIs, e.g. energy efficiency per building/workload/factory

The path to greater digital resilience with Energy Management

Foundational Visibility

Get Unified, Real-time, Granular Visibility

Focus on key metrics costs, energy efficiency, carbon footprint

Guided Insights

Build Correlations and KPIs

Identify key areas and levers to optimize at scale

Proactive Response

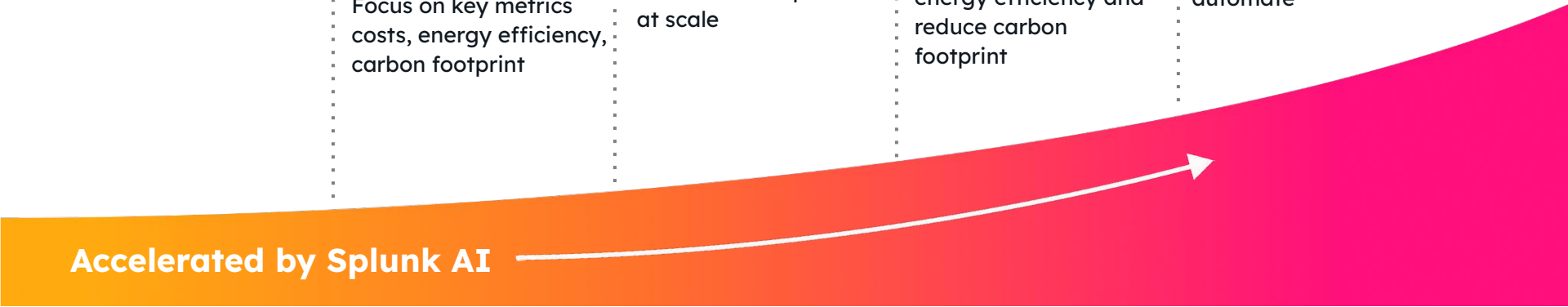
Optimize at Scale

Transform your operations and optimize costs, energy efficiency and reduce carbon footprint

Unified Workflows

Automate the Optimization

Leverage AI / ML with outliers, forecasting, clustering and recommendations to automate



References & Collaterals

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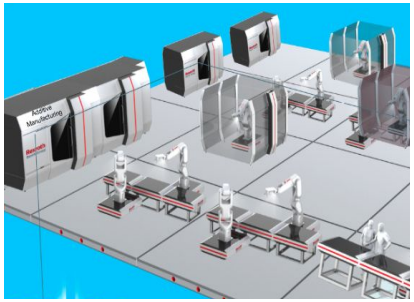
References Sustainability



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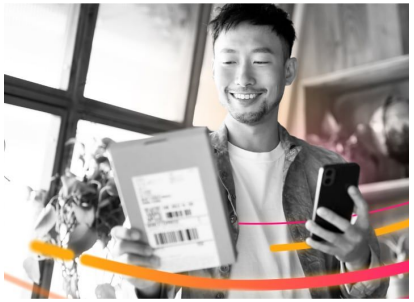
A Bosch Company

Industry Innovator Award

as part of Cisco's
Global Customer Awards
EMEA 2025 program



Global Sporting Goods Manufacturer

accenture DIGITAL REALTY

FLSmidth

Cement Industry

Customer Case 1

Bosch Rexroth AG

Energy Management for Factories

Key Challenges

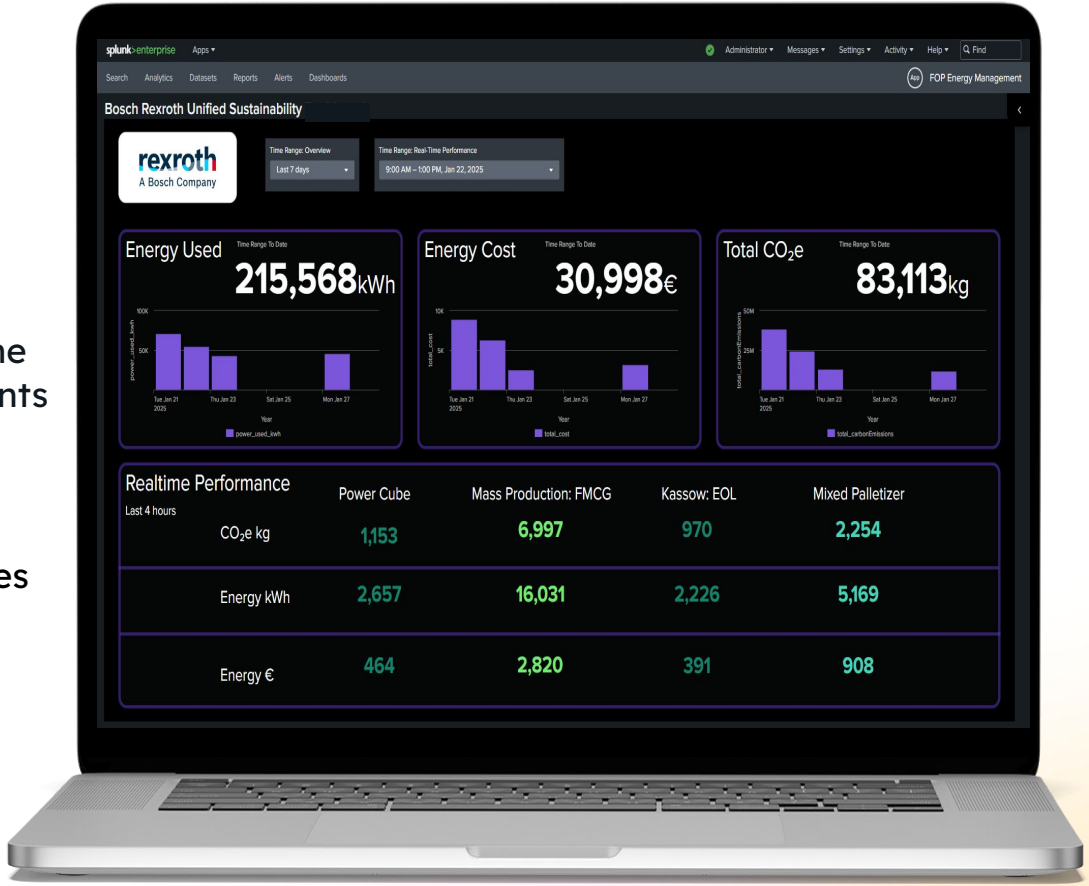
- Skyrocketing energy costs
- Increased regulation
- Lack of unified, granular and real-time visibility across IT and OT environments

Solution

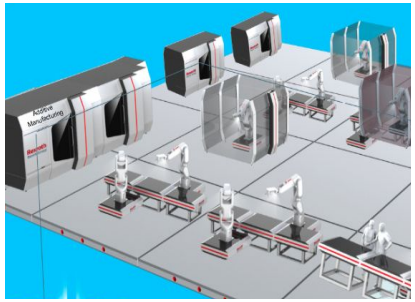
- Leveraged the Splunk Sustainability Toolkit
- Focused on energy-intensive machines
- Enabled optimization at scale with three key levers: Pricing (peak management), availability (standby), timing (operations scheduling)

Business Impact / Savings

- Costs (EUR) **20-30 %**
- Energy (kWh) **10-15 %**
- GHG* emissions (CO2e kg) **25-30 %**



**GHG: Greenhouse Gas



rexroth
A Bosch Company

Industry Innovator Award

as part of Cisco's Global Customer Awards EMEA 2025 program

"IT and OT observability in our factories is key.

We have significantly increased our resilience by using Splunk's energy management solution in combination with our Factory Orchestration Platform (FOP) by tackling energy costs, energy efficiency and carbon footprint."

Harald Lukosz
Referent Product Area Stage R&D, Bosch Rexroth AG

Cisco Live Presentation 2025 Amsterdam: Building Resilience with Energy Management for Factory Automation at Bosch Rexroth AG

Customer Case 2

Global Sporting Goods Manufacturer

Unified Sustainability Solution for the Cisco Network

Key Challenges

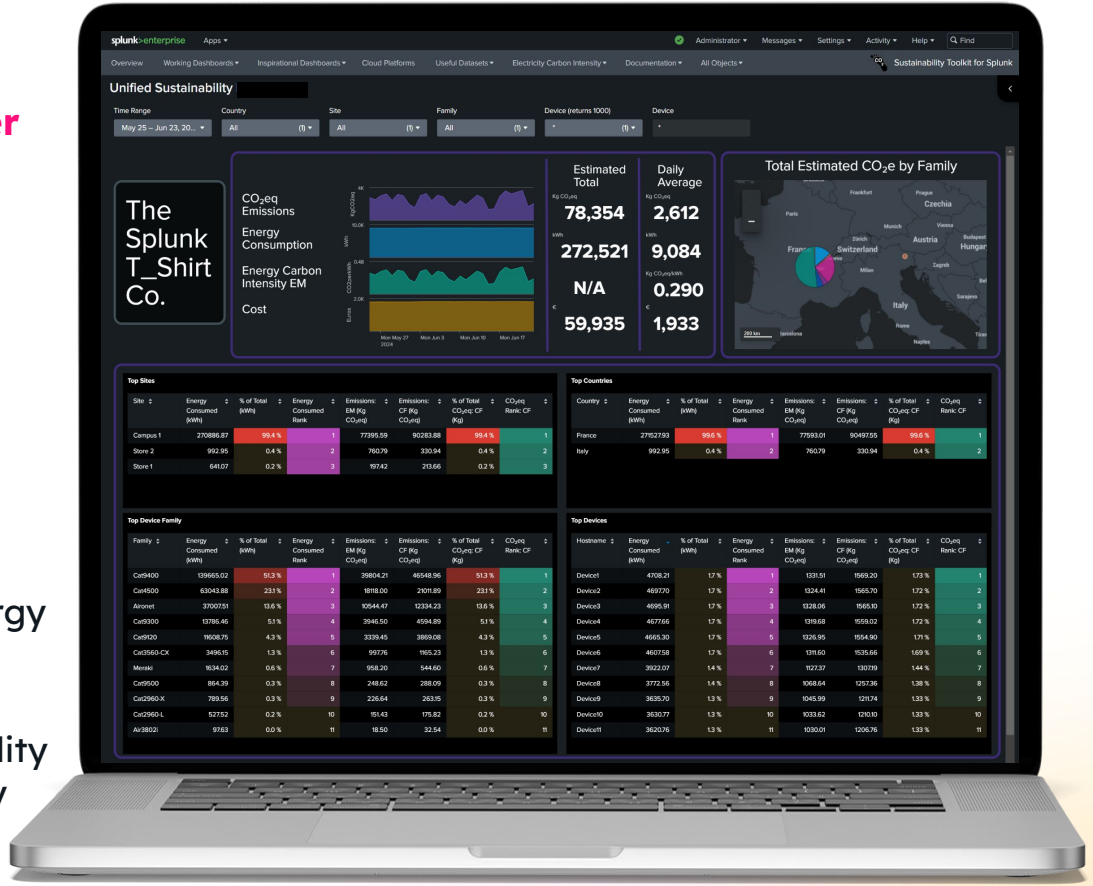
- Tooling complexity
- Lack of real-time visibility

Solution

- Leveraged the Splunk Sustainability Toolkit
- Unified Cisco + Splunk solutions
- Built key KPIs/ correlations, e.g. energy + traffic efficiency by sites & families

Business Impact

- Unified, granular and real-time visibility across countries, sites, devices family and devices
- Enabled optimization at scale



Disclaimer: Figures are for illustrative purposes only

Emissions are calculated using Electricity Maps (EM) real-time values of kgCO2e/kWh from the grid or based on a organization provided Carbon Factor (CF) per location.

Customer Case 3

Accenture Cloud Innovation Centre Zurich at Digital Realty

E2E Visibility and Carbon Footprint Optimization of Data Centres

Key Challenges

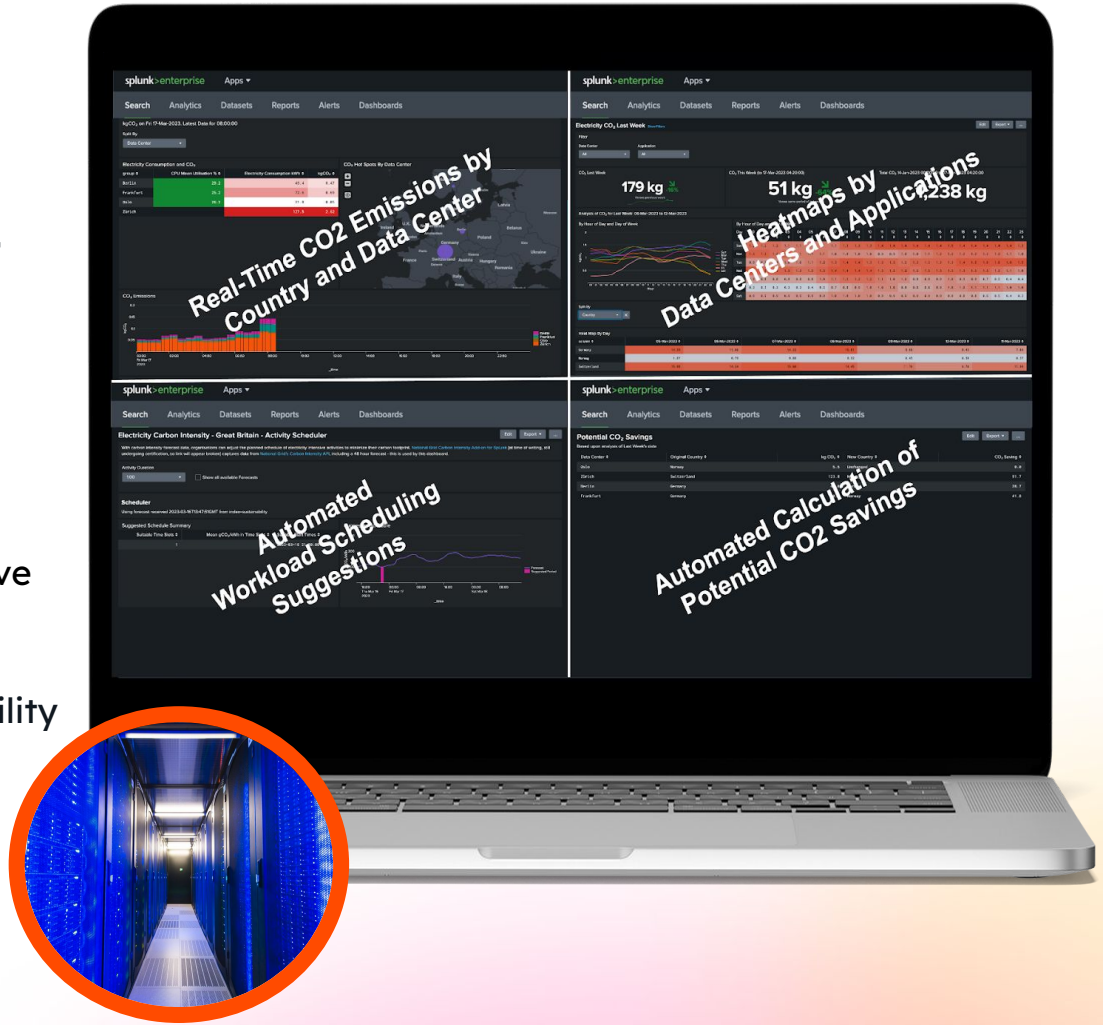
Lack of granular and real-visibility

Solution

- Leveraged the Splunk Sustainability Toolkit
- Focused on complex, energy-intensive but non-time-critical workloads

Business Impact

- Unified, granular and real-time visibility across countries, DCs + applications
- Enabled optimization at scale with two key levers:
  - Location (workload shifting)
  - Timing (workload scheduling)



Customer Case 4

FLSmidth

Carbon Footprint Reduction in Cement Production

Key Challenges

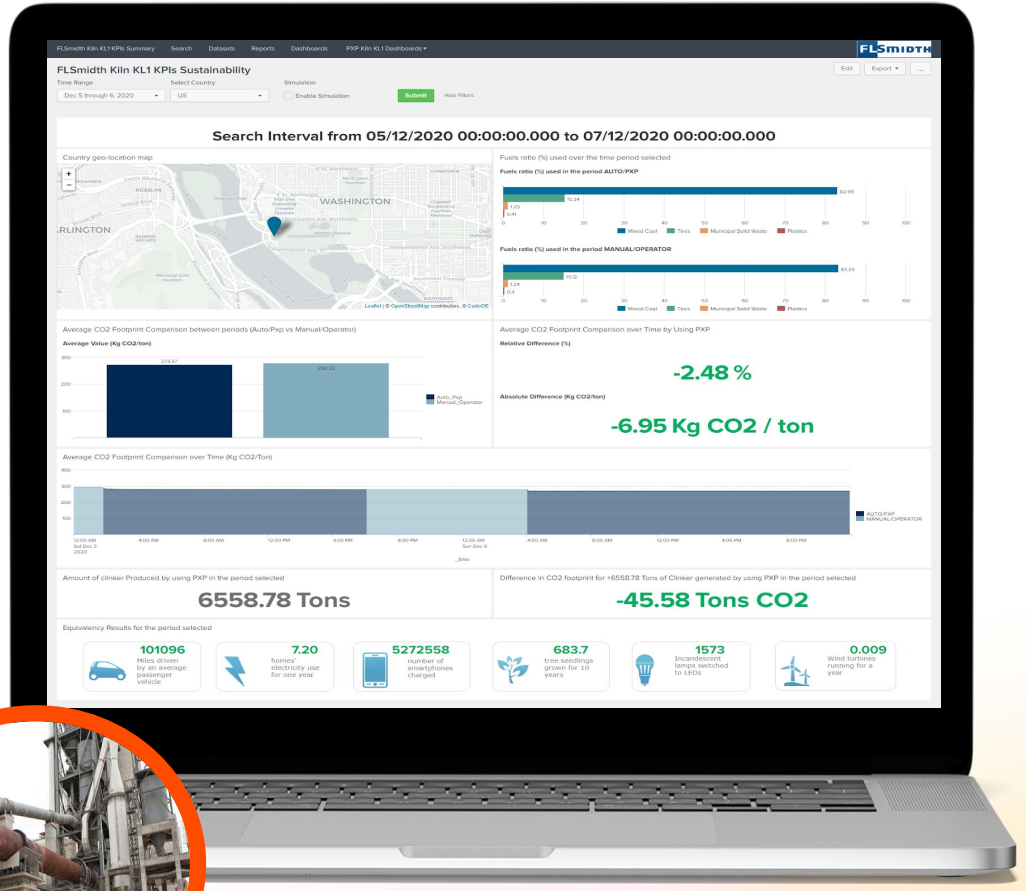
Realization of the company goal: “Towards zero emissions in mining and cement”

Solution

Leveraged Splunk with a customized dashboard

Business Impact

- Real-time + simulated / predictive view of GHG emissions to optimize “ingredients” of power-mix during cement production
- Reduction of carbon footprint
- Automated translation into tangible equivalents such as car miles



THE SMART FACTORY by Deloitte

in Duesseldorf enriched by

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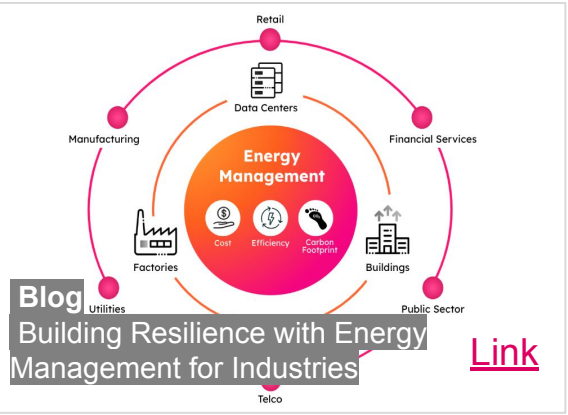
OT Security

Energy Management

Read On!



Blog
Building Resilience with Energy Management for Industries
Link

Blog
AI & Sustainability: Better Together with the Splunk Sustainability Toolkit
Link

Link

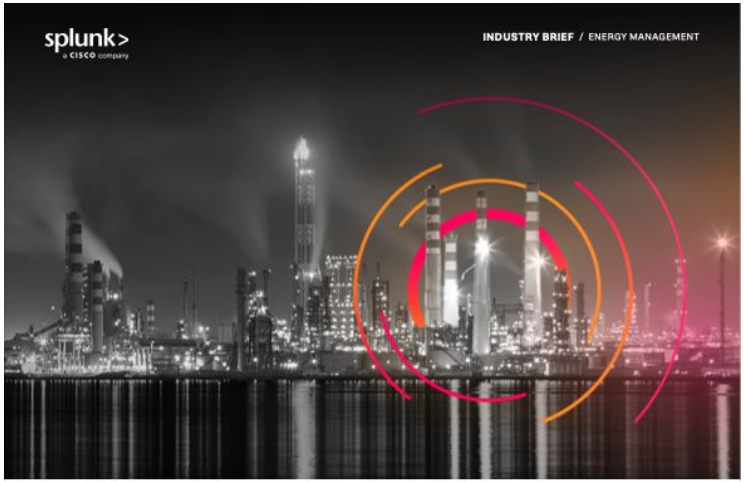
Blog
Splunk Sustainability Toolkit V2
Doubling Down on IT Sustainability and Beyond

Link

Bosch Rexroth
Energy Management Case Study

Link

Blog
AI + Quantum in Manufacturing



You can't manage what you don't measure: Unified visibility is the foundation for energy management and compliance

It's time to take a strategic view of energy management.

Energy keeps organizations operating — whether it is keeping a factory conveyor belt running, letting citizens access digital services from home, or ensuring retail stores can open to serve customers. It's also a costly, and sometimes unpredictable, business expense.

Better energy management gives organizations more control and insight to weather change and strengthen operational resilience. Today's organizations know that controlling energy consumption is critical to lowering operating costs and enhancing efficiency, but there's more at stake.

When organizations take a strategic view of energy management, they can address three interlinked priorities: energy costs, energy efficiency, and carbon footprint. Governments and companies around the world have acknowledged the importance of reducing emissions, many with a goal of reaching net zero greenhouse gas (GHG) emissions by 2050. Energy efficiency contributes to an improved carbon footprint.

To meet sustainability goals, organizations need to revitalize their thinking around energy management. Instead of a fractured approach hampered by disparate systems and manual workarounds, organizations need to bring critical data into a unified solution that lets them see trends and take action.

Link

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