

#UnlockDataPoweredImpact

# Unlocking Data Powered operational & sustainability impact, Globally.

Efficiency  
Impact

Productivity  
Impact

Safety  
Impact

Sustainability  
Impact



# Unlocking Data Power Impact with Enterprise-Grade Product Suite

Being a company with a holistic impact, we prioritise the efficiency impact of energy savings provided by energy monitoring systems (EMS), the productivity impact of lowering OPEX by utilising OEE, and the safety and reliability impact of increasing uptime and reliability, which increases ROI.

Our services are compliant with international norms and the SDGs, with an emphasis on achieving net-zero emissions. Our strategy aims to maximise return on investment (ROI) by delivering quantifiable outcomes. Our sector-neutral solutions are tailored to your unique requirements and goals, whether they be to reduce costs, increase productivity, or lessen the impact on the environment.

At Greenovative, we're dedicated to assisting companies all around the world in building a profitable and sustainable future.

200+

Client  
Engagements

10+

Geographical  
Presence

10+

Global  
Recognitions

80+

Profits Reinvested in  
NextGen Innovation

# Global Recognitions



Growth Fund  
by **European  
Investors**



Winner – Emergx “Highway to a 100 Unicorns” –  
**Microsoft for Startups 2020**



Winner of **Maharashtra Start Up  
Week 2018, India**



Smart Startup of the year 2020 by **India Smart Grid Forum**  
For power quality at **EV charging station**



Winner of BIZ Arena by  
**Proctor & Gamble 2019**

# Partnering with Greenovative: Key Advantages



01

Comprehensive  
Solution Offerings



02

Domain  
Expertise



03

Customer-Centric  
Approach



04

Global Presence



07

Growth Fund by  
European Investors



06

Compliance with  
Global Standards



05

Continuous support  
to clients







# Our Offerings



**Greenovative:** improved operations, reduced usage of energy, and higher return on investment empowering businesses with cutting-edge technology for increased output and collaborative workflow.

## Efficiency Impact



**~10%**

of energy savings are delivered by Energy Monitoring Systems (EMS)

### GreenErgy - Energy Management System

- Enables effective energy management through data collection, diagnosis and reporting
- It complies with the Global Standards
- User-friendly interface

## Productivity Impact



**~20%**

reduction in OPEX, by leveraging OEE (availability, performance & quality Metrics)

### Overall Equipment Effectiveness – OEE

- It calculates the amount of productive manufacturing time.
- The system ensures productivity, efficiency and uptime of the machinery.
- The ultimate goal is to optimise the equipment and operator's productivity

## Safety and Reliability Impact



**~15%**

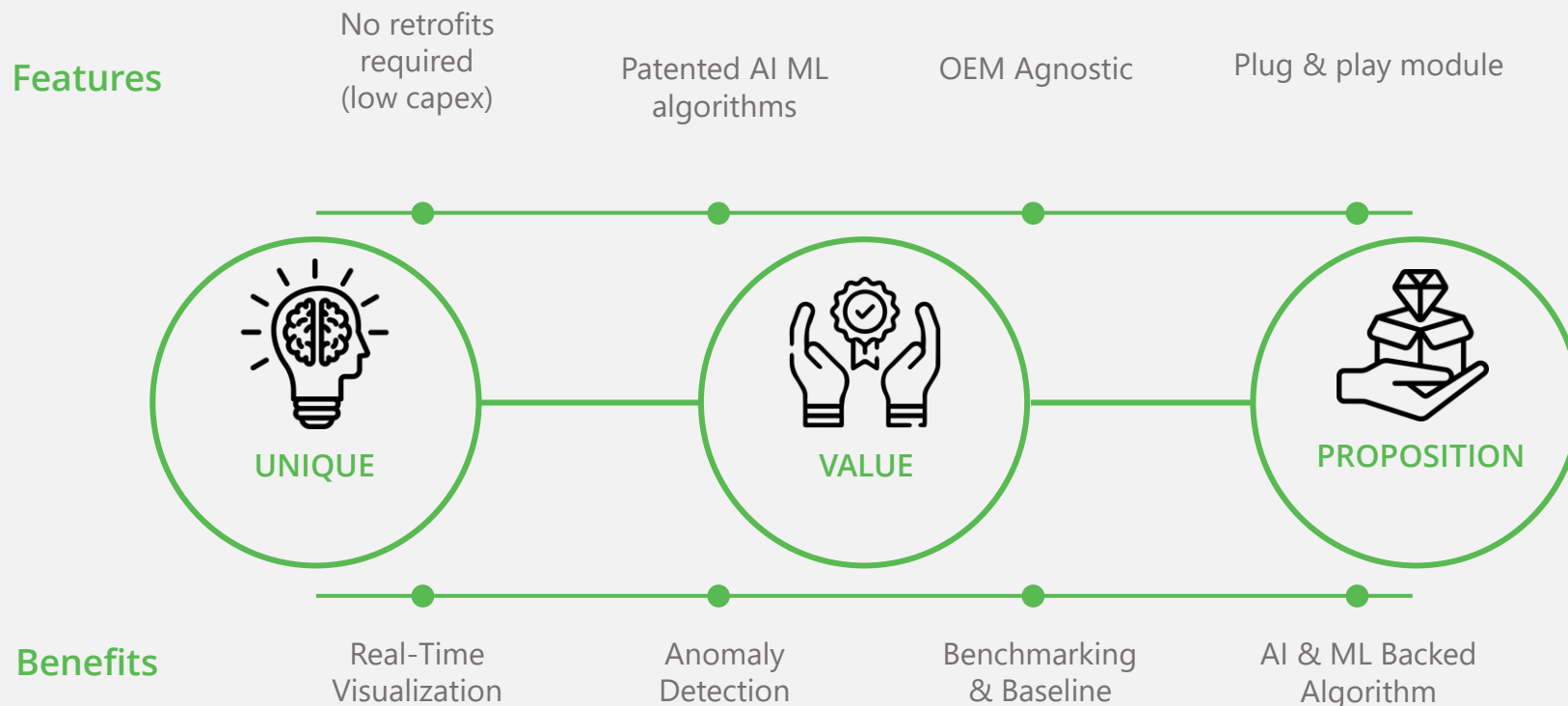
improvement in operation and utility side by Asset Performance Management

### Asset management

- It places a focus on maximising ROI by making sure that your assets are operational with extended uptime.
- Increases response time before any downtime or system issues occur.
- It aids in yearly service cost simulation, ensuring efficient and prolonged machinery functioning.

Note: These are aggregated data points that can differ from case to case.

# Product Features



**What Makes  
It Unique**

Backed by **150+ years**  
of experience SME

Collaboration with  
**WCI, California**

Recognized by **Nasscom**

Member of **CII ACE program**



## Efficiency Impact

~10% of energy savings are delivered by Energy Monitoring Systems (EMS)

## Productivity Impact

~20% reduction in OPEX, by leveraging OEE (availability, performance & quality Metrics)

## Safety and Reliability Impact

~15% ROI on Asset Capex by improvement in uptime & reliability (Asset Performance Management)

Note: These are aggregated data points that can differ from case to case.

## Sustainability Impact



Reduction in Carbon Emissions



Catalyst in Circular Economy



Promoting Climate Action

# Impact Measures for Platformised Solution



Through real-time insights and precise predictive analytics, Greenovative's AI-powered solutions optimise energy efficiency, boost productivity, and improve reliability and safety.

~1 Bn+

Data points  
processing

~40%

Reduction in Carbon  
Footprint

~18%

Decrease In Energy  
Consumption

~30%

Savings adhering  
compliances

~7%

Increased Productivity

~15%

Amplified Equipment  
Uptime

~20%

Maintenance Cost  
Reduced

Note: These are aggregated data points that can differ from case to case.

## Our Key Strengths

Presence in  
**10+ countries**

Cross-domain  
expertise in **8+ sectors**

**1000+** successful implementations  
backed by AI/ML technology

Prompt resolution of queries to  
maintain **24/7 global support**





# Impacting Enterprises Across Industries



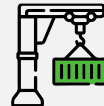
At **Greenovative**, we are experts in cross-domain servicing which are industry agnostic and help businesses achieve cost effectiveness at every stage. We assist reduce OPEX and CAPEX costs and streamline operations thanks to our expertise in digital transformation. Our dedication to upholding international compliance norms, including environmental goals like net zero, guarantees long-term success for our wide variety of clients.



Chemicals  
Paints Explosives



Pharma  
Industry



Heavy Industries  
& Others



Automobile  
Industry



Steel  
Industry



Food &  
Beverages



Tyres &  
Plastics



Textile  
Industry



Institutes &  
Facilities



Cement & Oil  
Industry

# Delivering Impact Too



Chemicals  
Paints  
Explosives



Pharma  
Industry



Automobile  
Industry



Heavy  
Industries  
& Others



Steel  
Industry



Food &  
Beverages



Tyres &  
Plastics



Textile  
Industry



Institutes  
& Facilities

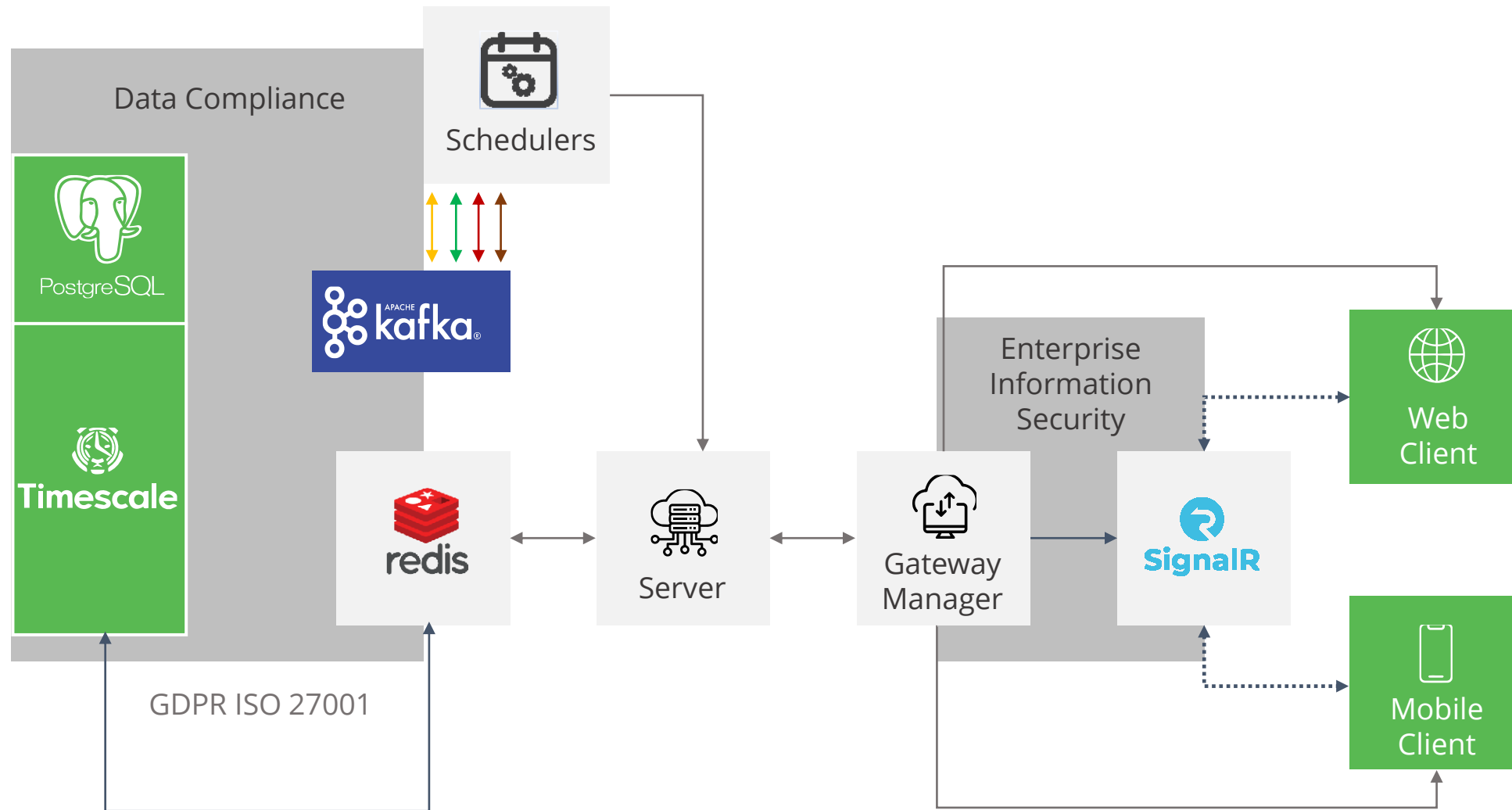


Cement &  
Oil Industry

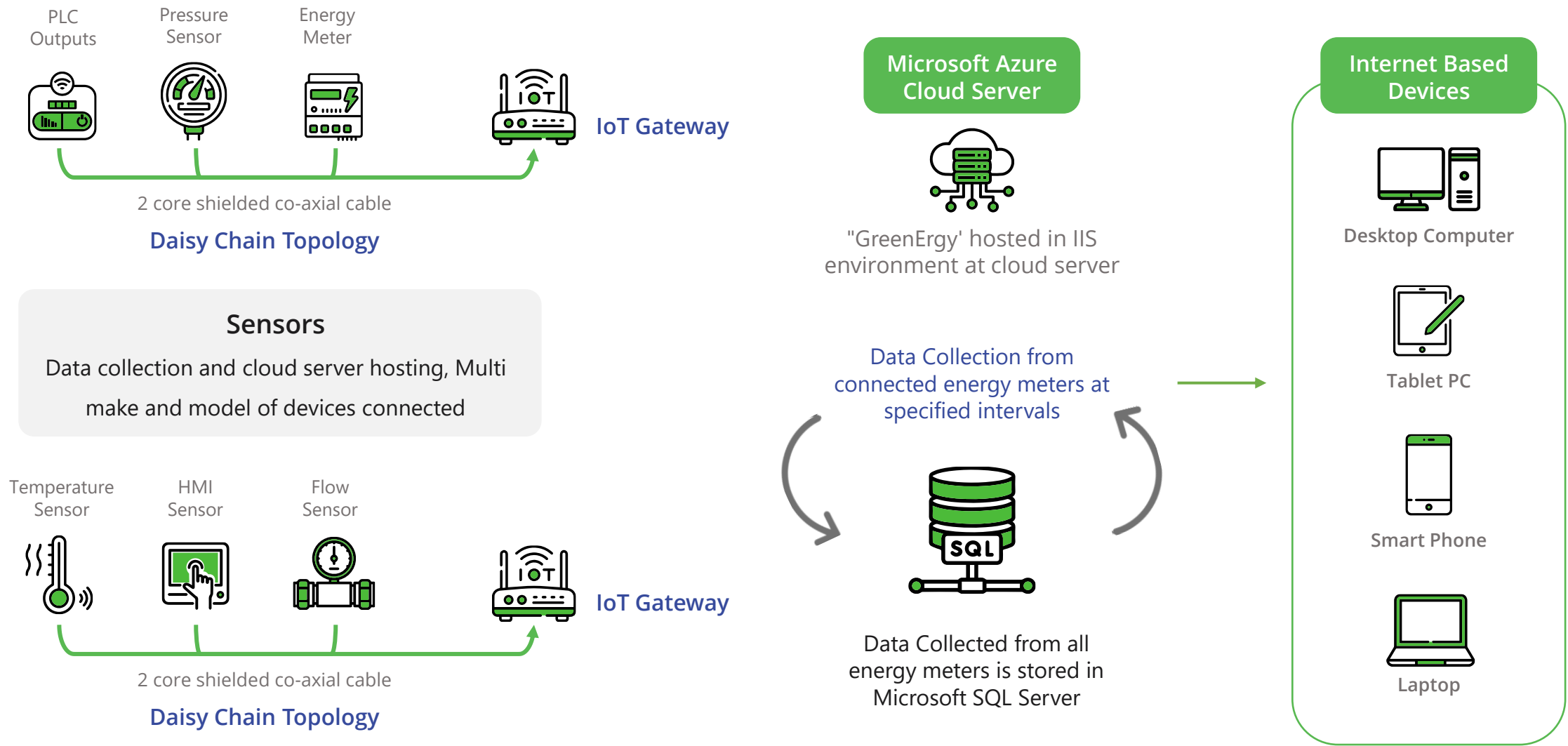


Our clientele is expanding and includes companies in a variety of sectors, including manufacturing, healthcare, pharmaceuticals, textiles, energy, and more. We have collaborated successfully with companies in a variety of industries

# Data Powered Service Architecture



# Network Architecture Schematic – SAAS Based Model

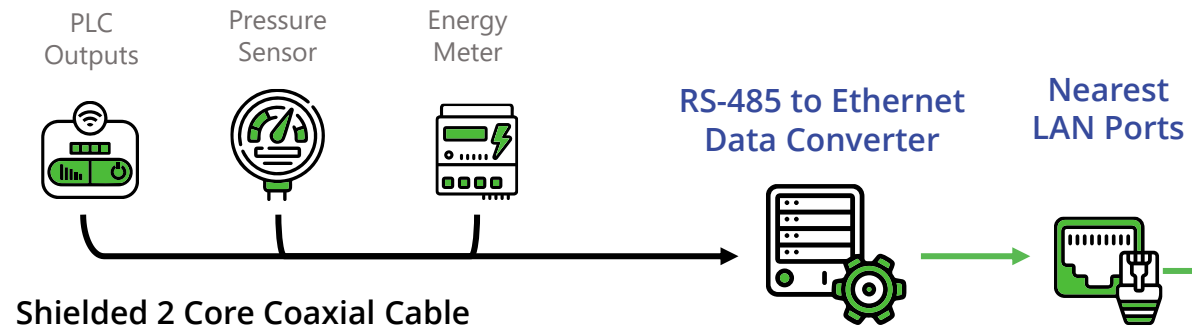


# Network Architecture Schematic – On Prim Service



## Plant Location 1

### Sensors With RS-485 Ports

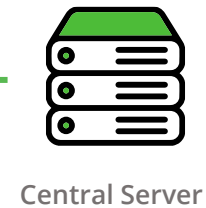
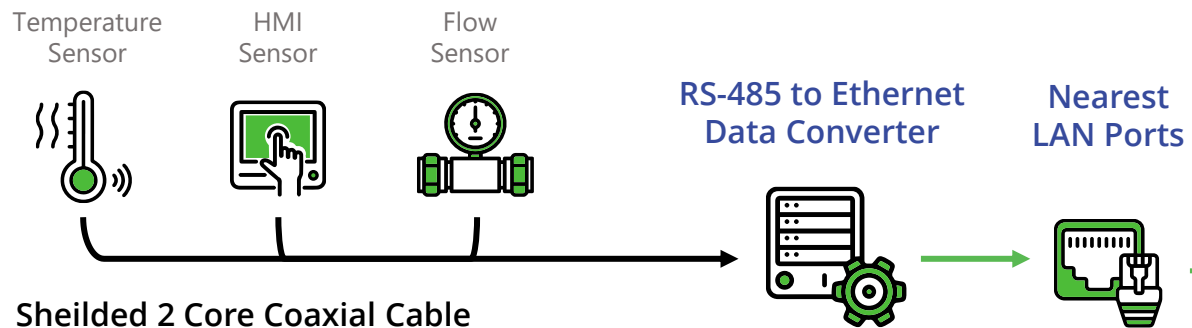


Existing LAN Network

Shielded 2 Core Coaxial Cable

## Plant Location 2

### Sensors With RS-485 Ports



Central Server

### Multiple User Access



User 1



User 2



User 3

System Architecture

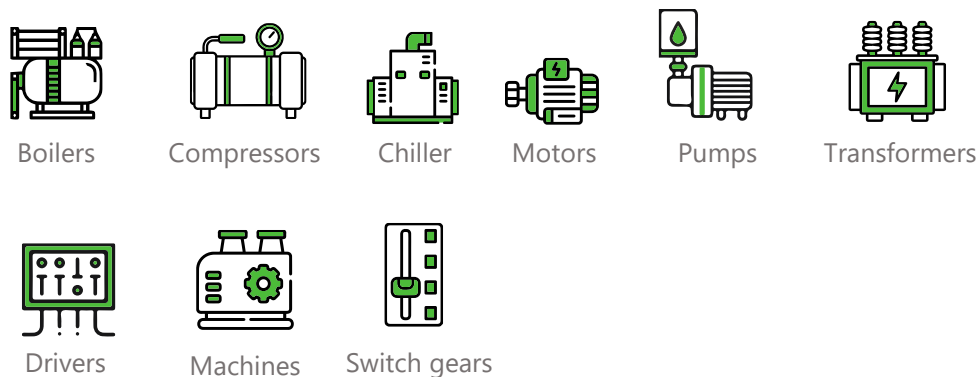




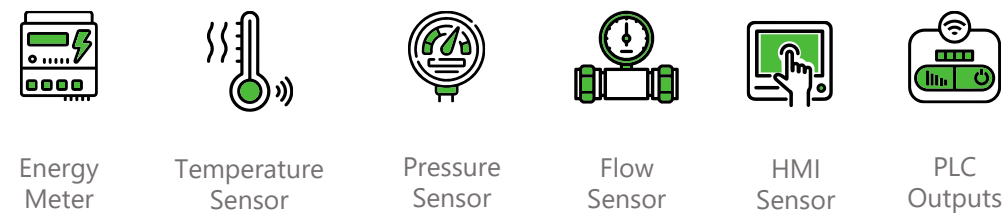
# OEM Agnostic Solution Building Blocks



## Field Equipment



## Field Sensors



## Connectivity Support



## Supported Protocols (All)



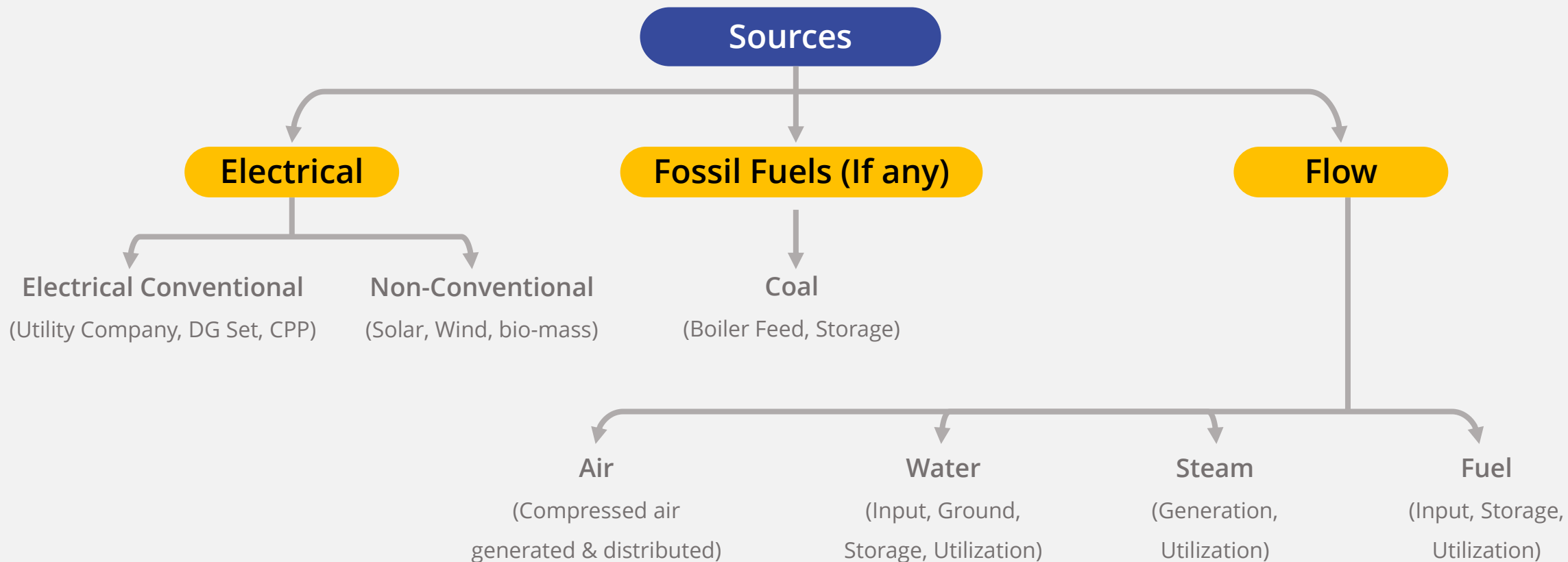
## Technology Platforms



## Third Party Integration



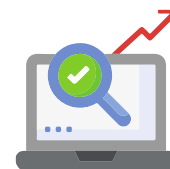
# Key Energy Impact



Operational  
Optimisation



Sustainability  
Goal Achievement

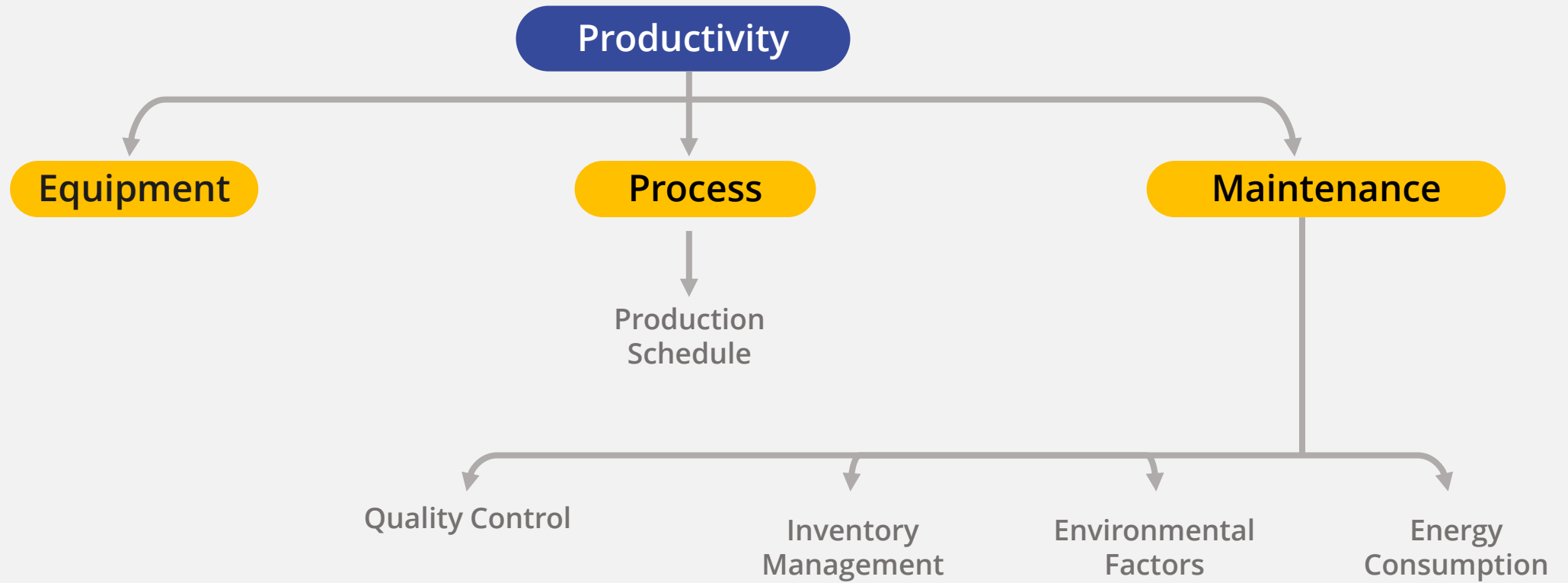


Accountability  
& Reporting



Global  
Compliance

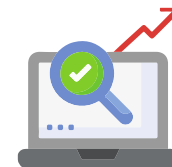
# Productivity Impact



Operational  
Optimisation



Sustainability  
Goal Achievement

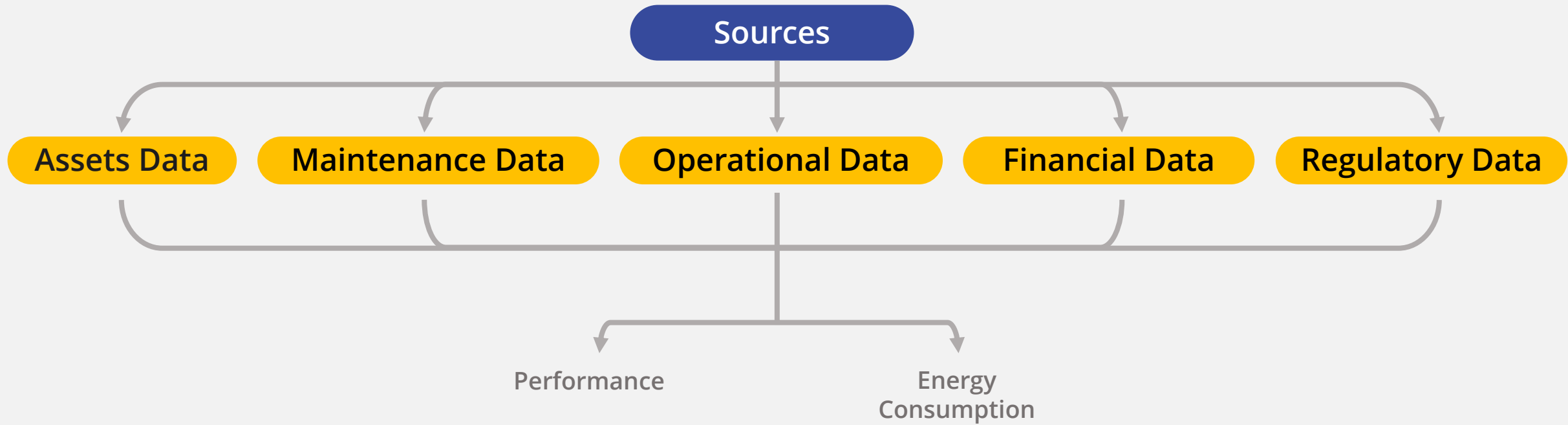


Accountability  
& Reporting



Global  
Compliance

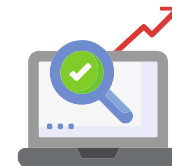
# Safety & Reliability Impact



Operational  
Optimisation



Sustainability  
Goal Achievement



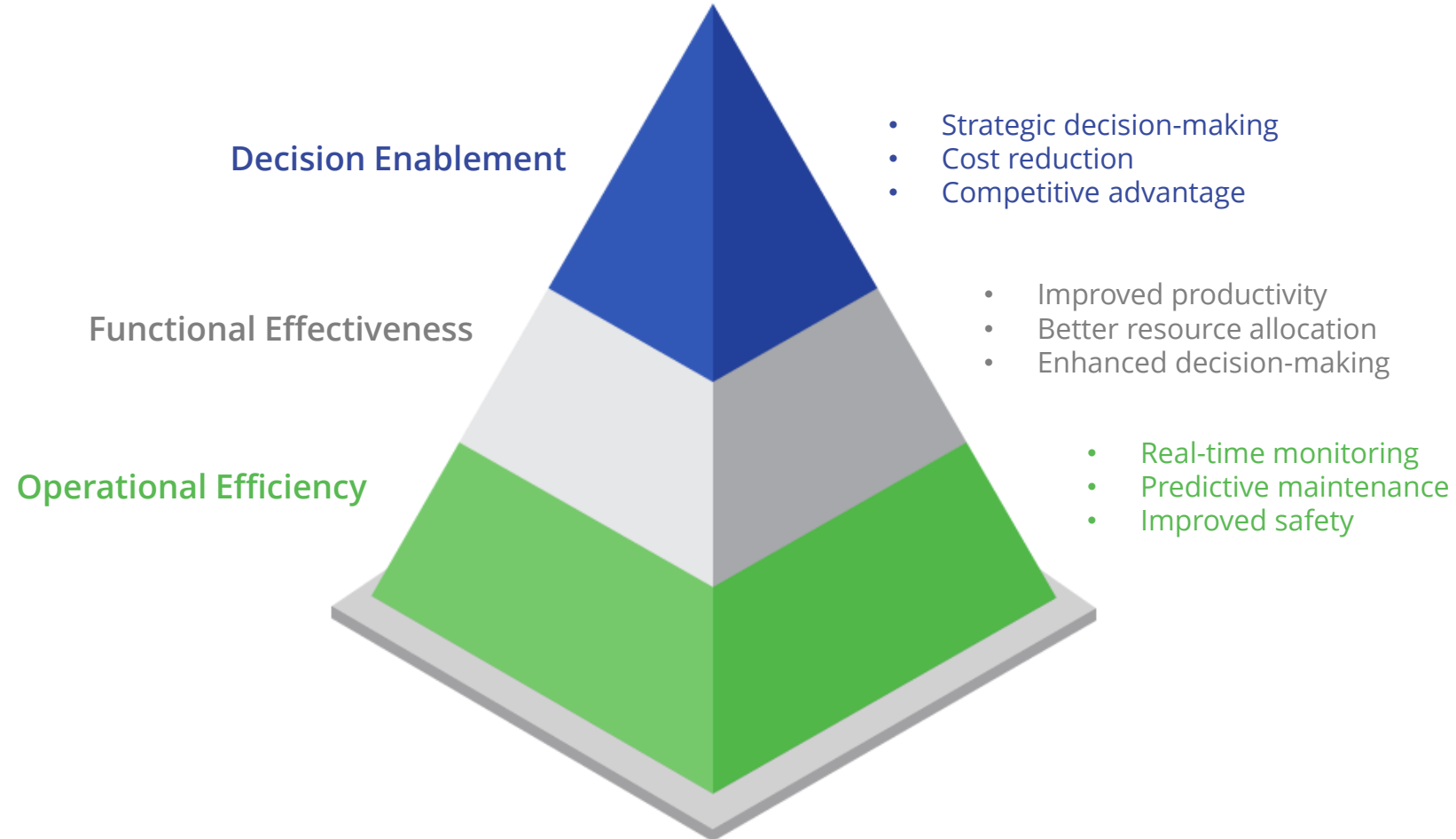
Accountability  
& Reporting



Global  
Compliance

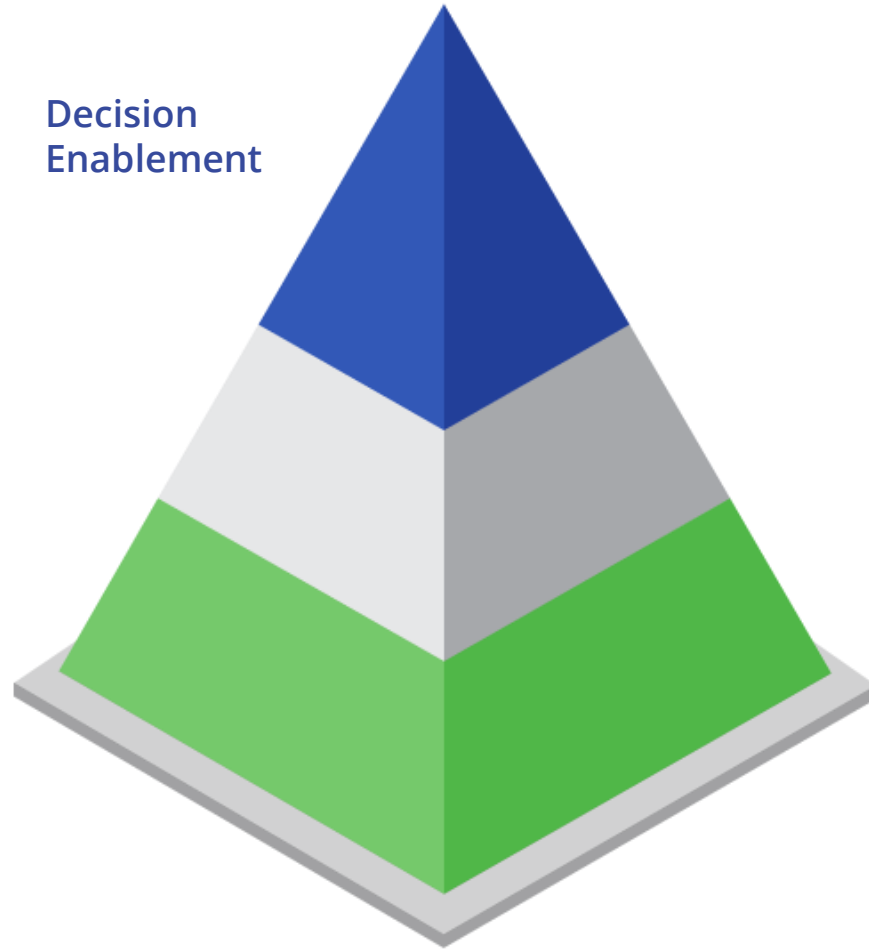
# Enabling Impact Across Business Pyramid

Leveraging our AI ML backed platform for energy management, productivity, safety, and reliability in a company can provide several benefits for people at different decision-making levels





# Enabling Impact Across Business Pyramid



## KPI Dashboard

Monitor energy efficiency KPIs in real-time with a customizable drag-and-drop dashboard, allowing you to track critical metrics and take action to improve efficiency easily.

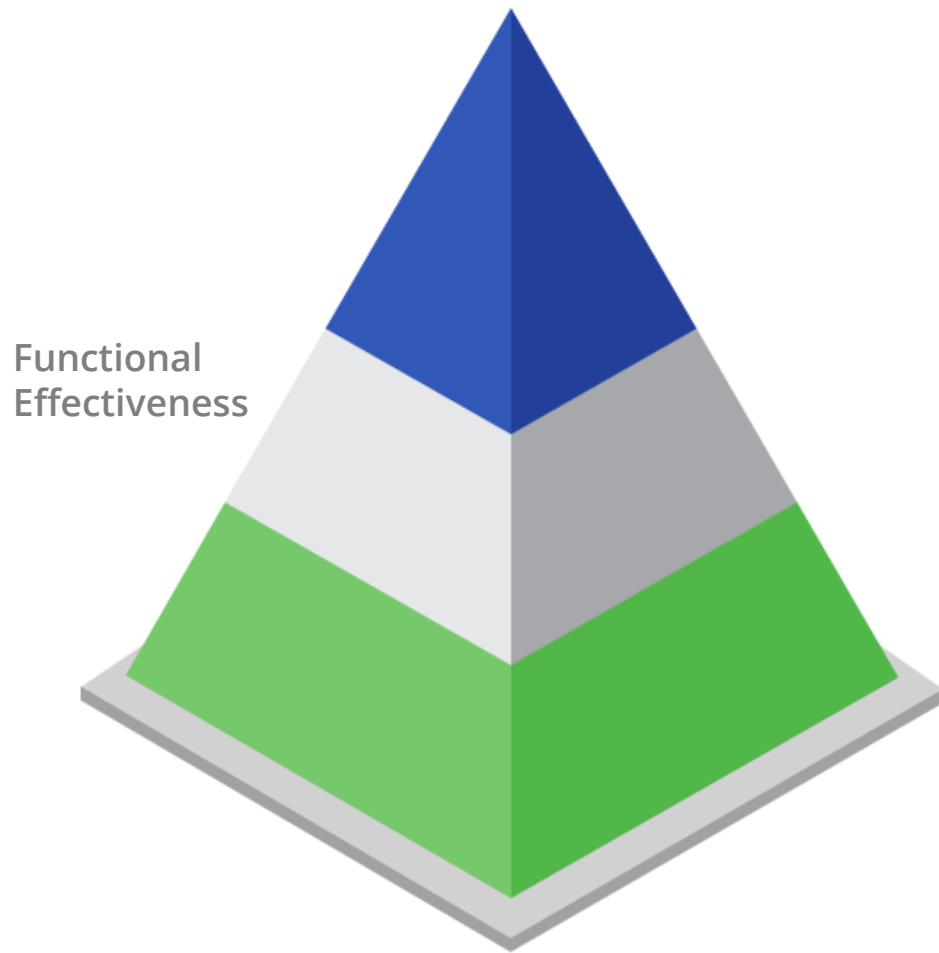
## AI & ML Backed Analytics

Leveraging the potential of AI and ML to gain comprehensive understanding of your organization's energy consumption patterns, and utilize this knowledge to streamline your processes for optimal efficiency.

## Sector Specific Analytics

Get tailored analytics and reporting that are specifically designed for your industry, providing insights into your unique energy usage patterns and opportunities for optimization.

# Enabling Impact Across Business Pyramid



## AI & ML Backed Analytics

Harness the power of AI and ML to gain deeper insights into your energy usage patterns and optimise your operations for maximum efficiency.

## Comprehensive Report Engine

Create data-driven reports on energy usage, performance, and costs with a comprehensive report engine that provides insights into your operations.

## Production Data Integration

Streamline your energy management by integrating production data into your EMS, enabling you to track energy usage and costs by production line, product, or SKU.

## Intelligent Alert & Event Escalation

Keep track of crucial energy events and performance problems by utilizing intelligent alert systems and benchmarking techniques that provide valuable insights into your energy consumption patterns.

## Role-Based Permissions & Configuration

Ensure data security and streamline workflows with role-based permissions that allow you to control access to sensitive energy data and automate routine tasks.

## User Activity Monitoring

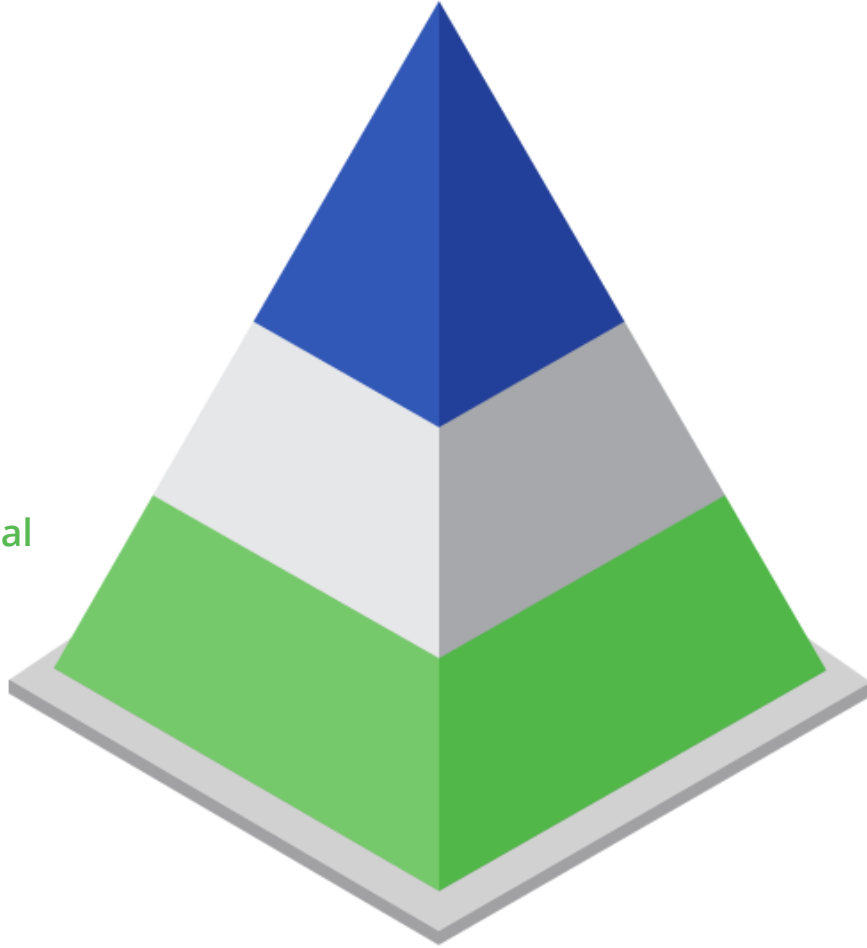
Monitor user activity in real-time to proactively identify and address potential security threats, ensuring the integrity and confidentiality of your energy data.

## Seamlessly Integrate with other System

Integrate EMS with third-party software, such as SAP, Oracle, ERP, and SCADA, to streamline your business's operations.

# Enabling Impact Across Business Pyramid

Operational  
Efficiency



## Predictive Distribution Network Visualization

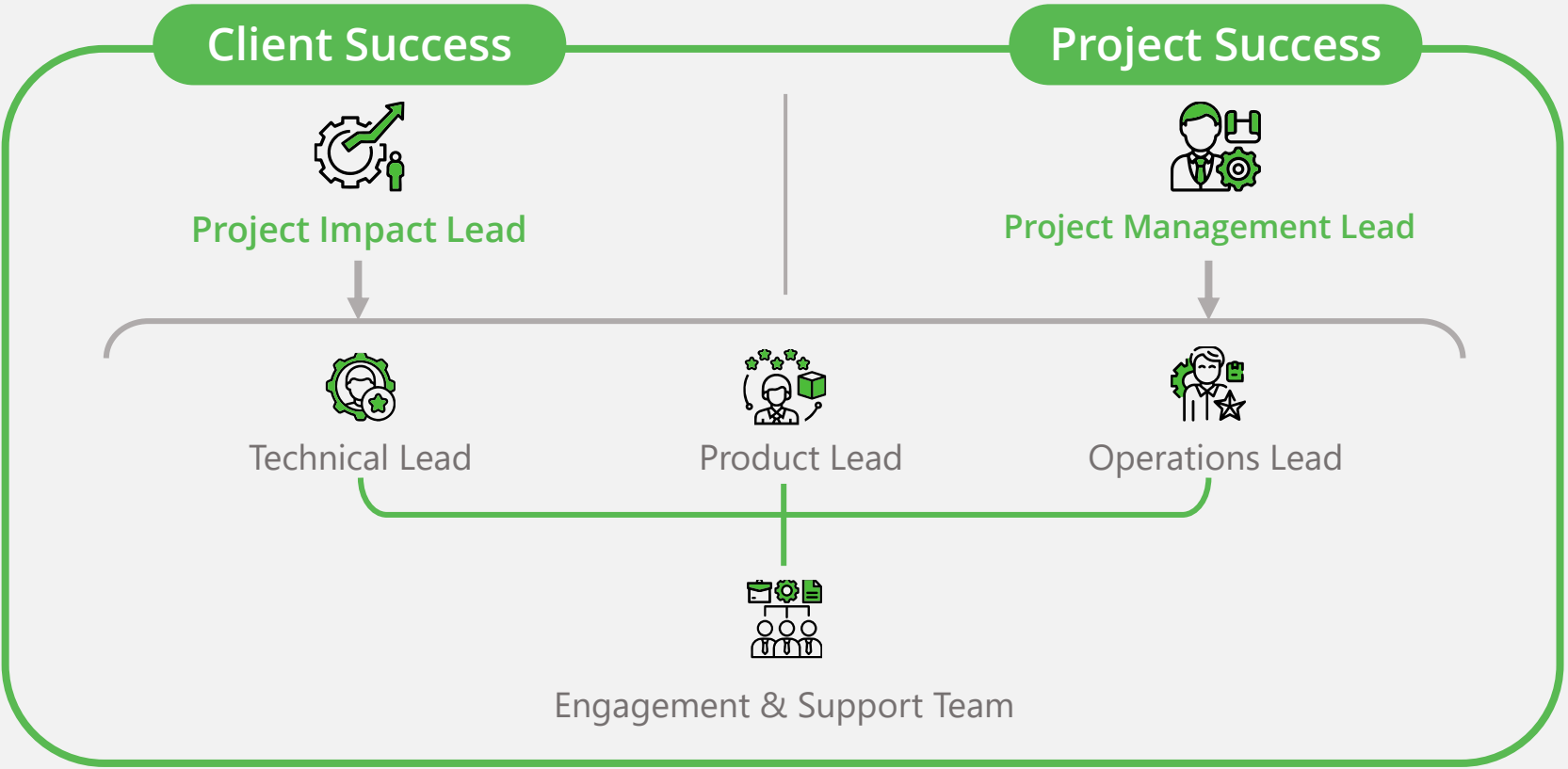
Visualise your energy distribution network in real-time with predictive analytics that enables you to identify anomalies, distribution patterns, imbalances, and losses.

## Intelligent Alert & Event Escalation

Stay on top of critical energy events and performance issues with intelligent alerting and benchmarking that offers insights into your energy usage patterns.

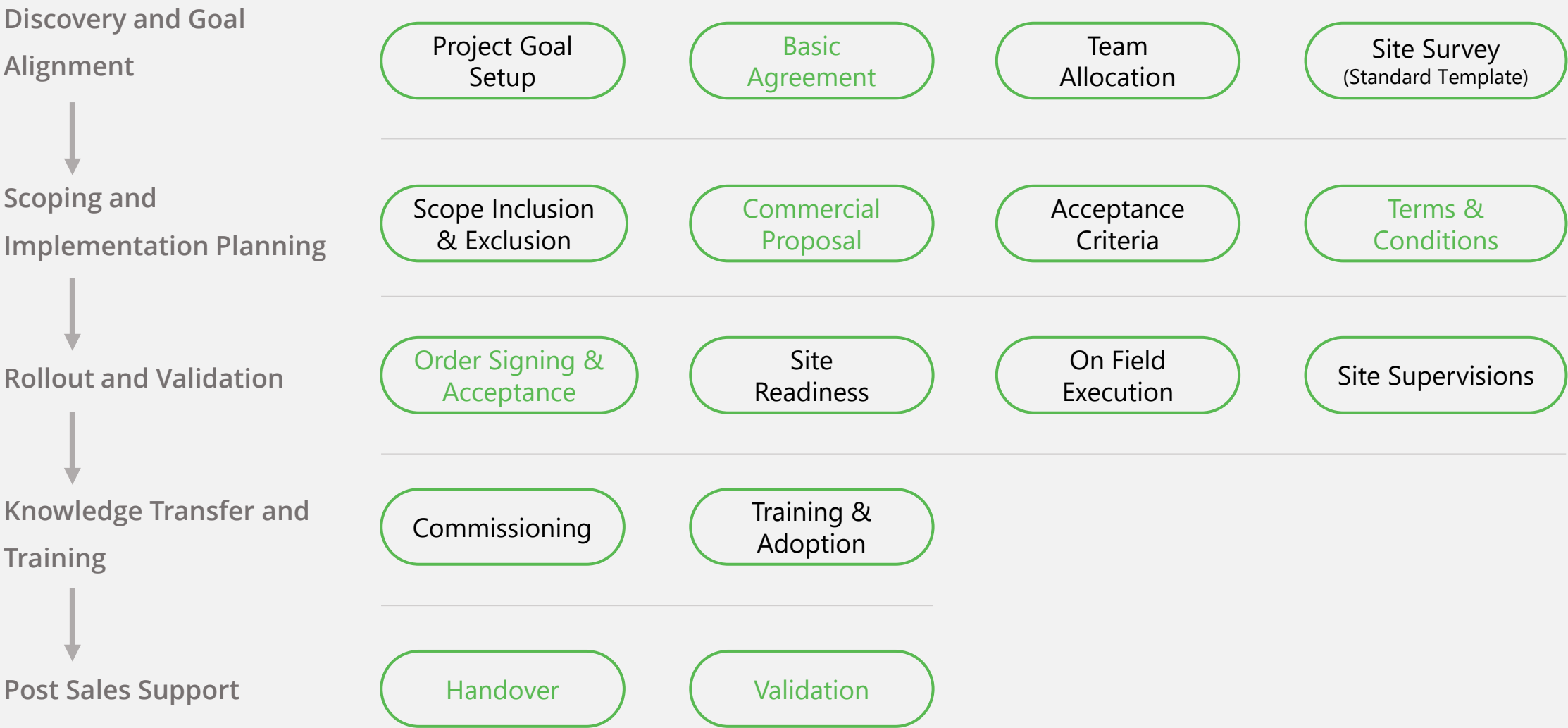


# Greenovative's Methodology for Implementation





# Greenovative's Proposed Project Approach



**Note:** The highlighted section are the process that requires **intervention or approval** apart from the **technical and functional team**.

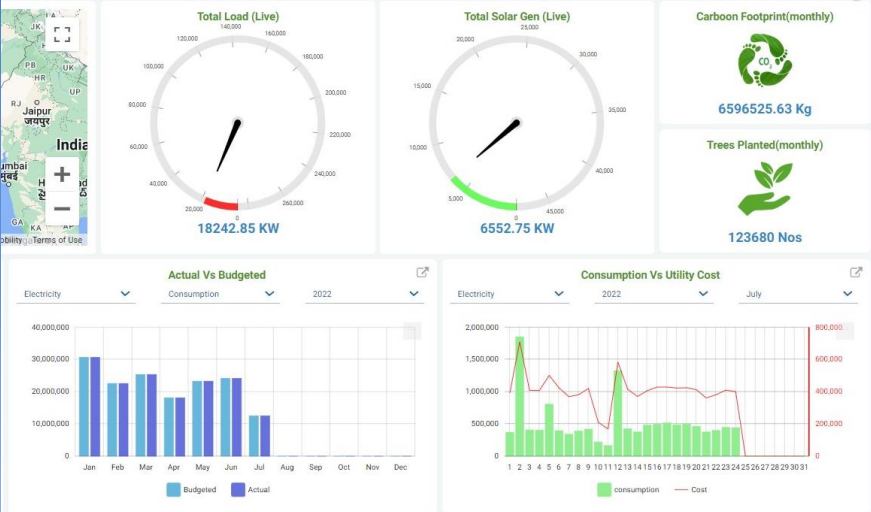


How a Partnership with Greenovative Helped Saudi Arabia's Largest Conglomerate Improve Energy and Operational Efficiency



Case Study

A significant and well-known Saudi Arabian conglomerate. In the Gulf Cooperation Council (GCC) nations, it has a network of 100 sales depots and five sophisticated manufacturing facilities.



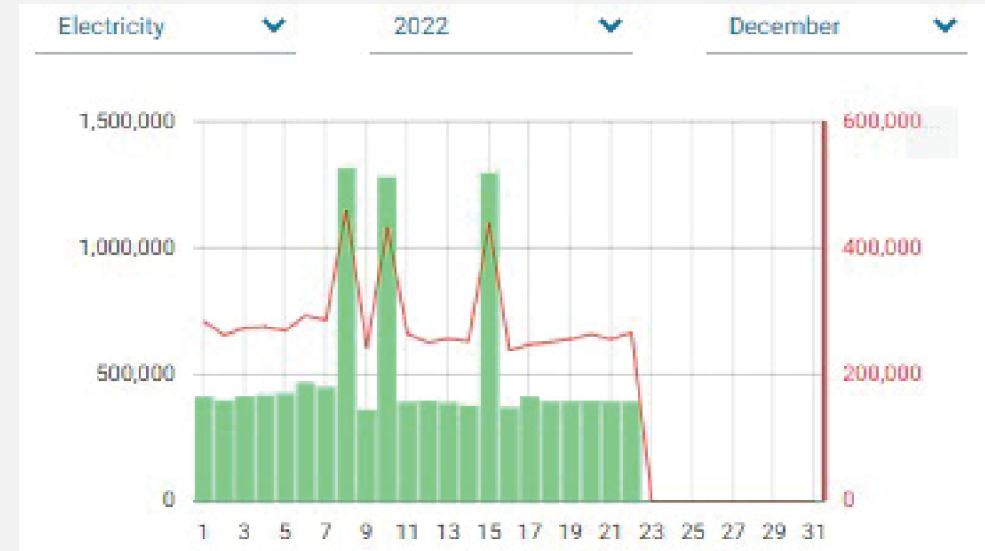
Impact Scale

## Problem Statement

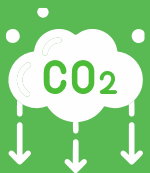
- Digital solution development for a sustainable future
- Compliance with ISO 50001 guidelines
- Improving energy consumption: Costing 75% of OPEX
- Platforming Energy Usage: Dashboarding for Benchmarking
- Optimisation of utilities like Air, Water, Steam, Temperature, Fuel, etc.

## Greenovative Impact

### Consumption Vs Utility Cost



## Value Impact



2579735 Mt

CO2 Emission Track  
(Yearly)

## Cost Impact



15%

of the energy losses were  
accounted

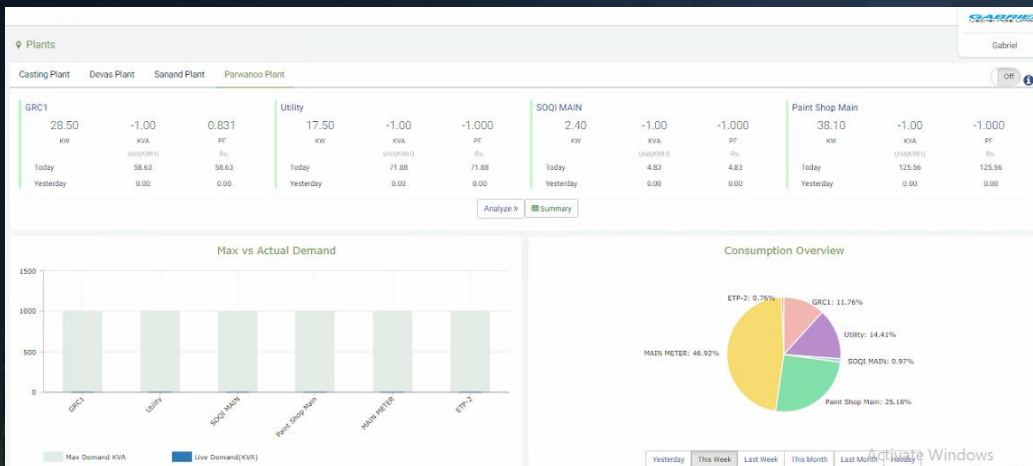
Anand Group is Collaborating with Greenovative to become a major force in the Global Automotive Sector for Innovation, Quality, and Sustainability.



## Case Study

The Anand Group comprises over 20 companies that specialize in various aspects of the automotive industry.

It has a diverse portfolio of companies and a strong reputation for innovation, quality, and sustainability.



ACYM

Mando

MAHLE

GABRIEL  
Gabriel India Limited



ANSYSCO

Hallex

Henkel

Faurecia  
inscribing mobility

POWER

Valeo

42

Impact Scale

## Our Engagement:

- GEPL has Annual Rate Contract for all 42 Plant of Anand Group in PAN India.
- Integration of Energy & Water meters on Centralized server for all Plants
- All Hardware Level Supply of Energy Meters, Flowmeters, Associated Accessories Gateways & Cables Cable.
- Production Data Integration for SEC reports

## Greenovative Impact



### Consumption Vs Utility Cost

**MAHLE**

- 6 Plants (Pune-2 Plants, Sanand, Noida, Chennai)
- 400 Sensor Integrated

**GABRIEL**  
Gabriel India Limited

- 8 Plants (Pune Casting, Pune Unit-2, Dewas, Sanand, Hosur, Khandsa, Nashik, Parwanoo)

- 800 Sensor Integrated



- 6 Plant (Pune, Jodali, Satara, Pantnagar, Chennai , Parwanoo)

- 650 Sensor Integrated

## Ongoing Engagement Advantages



Group Level Centralized  
Energy & Water  
Management System



On Time  
Execution  
Achieved



Per Product  
Baseline Set

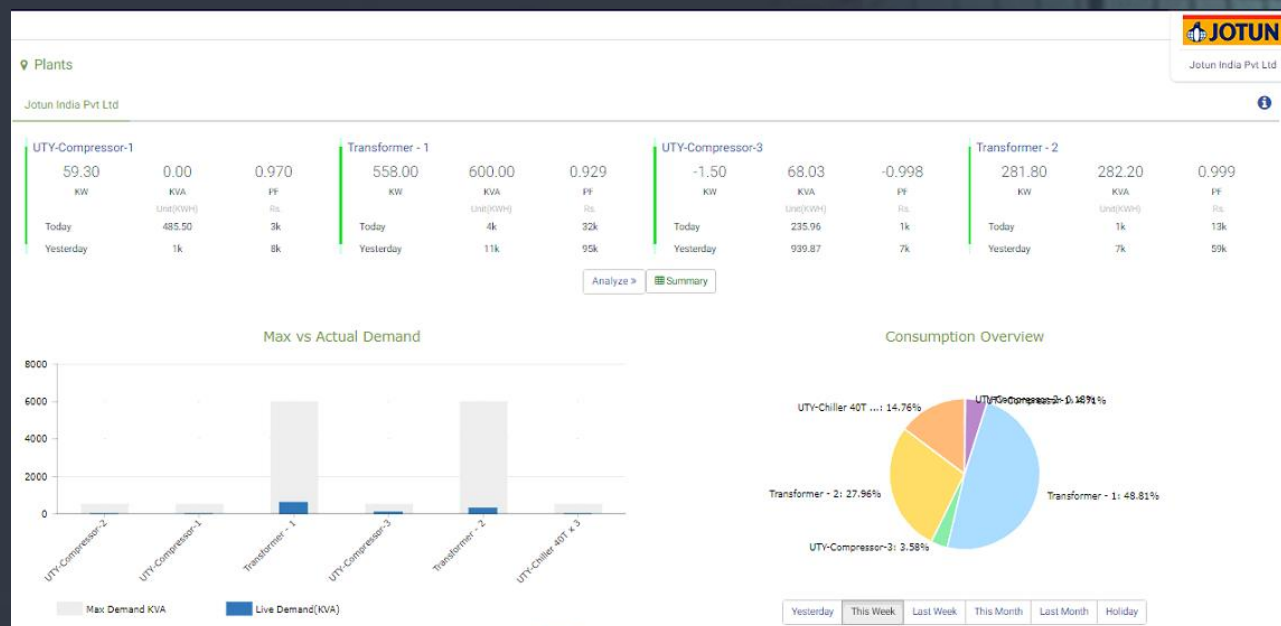


To promote innovation and sustainability in the paints and coatings sector, Greenovative and Jotun have established a solid cooperation, fostering industry change collectively.



## Case Study

With 10000+ employees working at 39 manufacturing units in different countries, Jotun has emerged as one of the fastest growing paints and coatings companies in the world.





## Problem Statement

- Measure performance of factories for Digital Edge
- Focus of GHG emissions
- Serving in the Energy Ecosystem, focus on reducing energy consumption in production
- Achieve 50% Reduction in Carbon Footprint by 2030
- Mandated MFM Installations at sites, to identify
- SEU areas, and set new KPI's for each site

## Greenovative Impact



- 5% reduction in Carbon footprint (2017-21)
- Individual Factories Connected On Premise EMS Server
- Energy Reporting to Calculate kWh/Tonne manufactured to meet defined benchmarks
- Identification and replacement of older systems with energy efficient new systems across the plants
- Asset management scope defined to upscaling the system

## Cost Impact



10%

Reduction in electricity consumption  
in kWh/Tonne Produced

## Clean Energy Impact



22%

of the load shifted to solar  
energy support

The Aditya Birla Group and Greenovative are leading the transformation of India's business community by creating a culture of innovation and sustainability and utilising cutting-edge technologies.



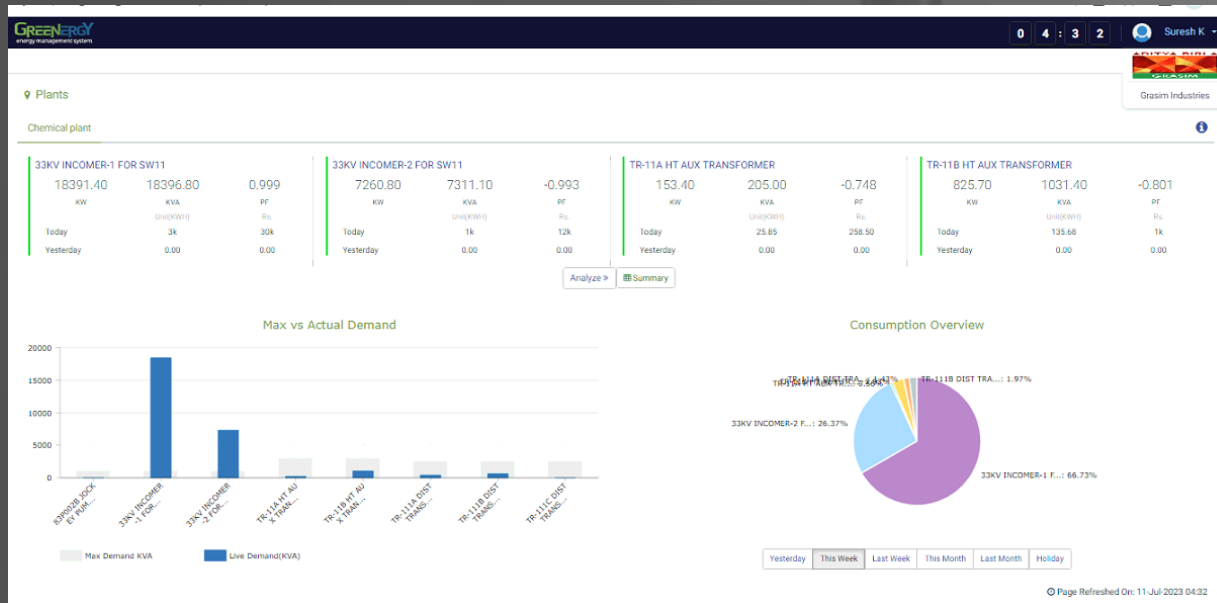
ADITYA BIRLA GROUP

## Case Study

Aditya Birla Group anchored with 140,000 employees belonging to 100 nationalities across multiple sector.



ADITYA BIRLA GROUP



## Problem Statement

- Focus on Electrical Energy And Water Consumption
- Power Consuming 80% of the variable cost
- Challenge in keeping equipment uptime leading production loss
- Load analysis for implementation of captive power generation & its utilisation

## Greenovative Impact



- Energy Savings of 8% across the factories
- Integration of the existing devices and commissioning new devices in the System
- Load analysis and recommendation based on usage
- Power Quality Analysis and reduction in harmonics
- Approx. 2100 sensor data across 3 factories
- Replacement of Old Motors with new IE 3

## Cost Impact



25 Lakhs

of cost savings achieved  
due to increase in efficiency

## Carbon Reduction Impact



22%

of carbon reduction  
achieved

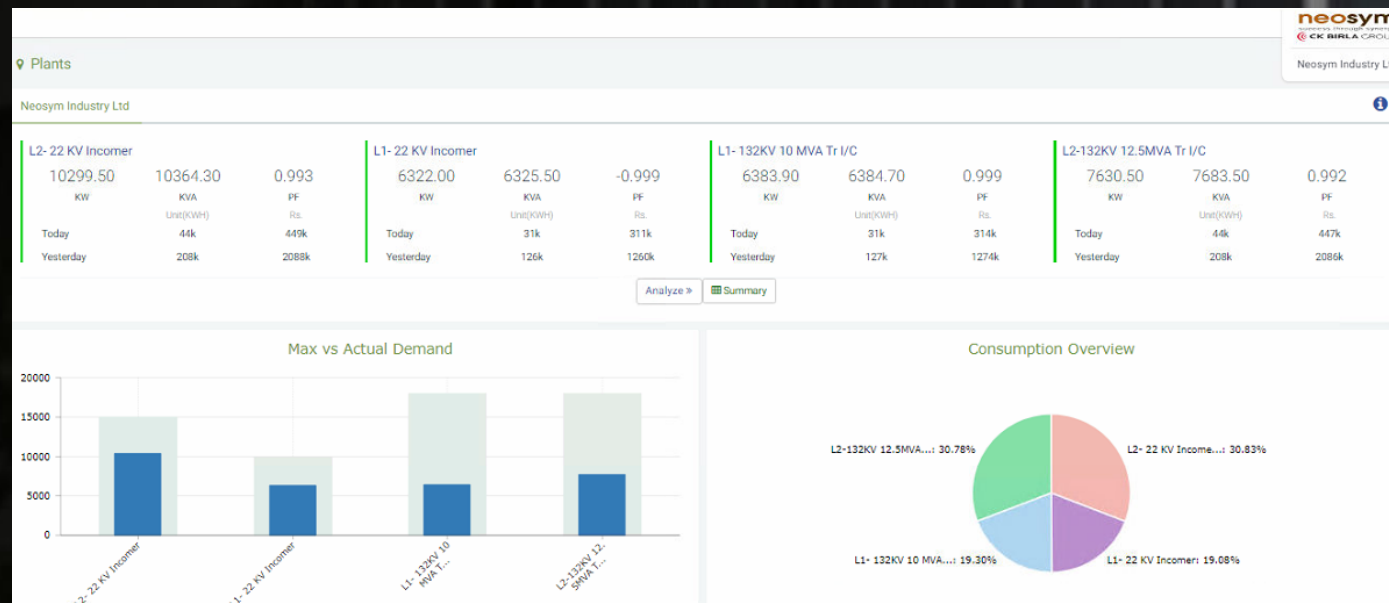
Greenovative brings its expertise in AI, machine learning, and digital twin capabilities, enabling Neosym to optimise their operations, improve productivity, and streamline workflows, exemplifying their shared commitment to innovation, quality, and sustainability.



neosym

Case Study

Neosym Industry Limited is a part of C.K. Birla Group. Neosym is basically into S.G Iron and Cast Iron serving multiple industrial sectors.



## Problem Statement

- Define the baseline and benchmark the performance as per Industry standards
- Optimise the resource utilisation for sustainability
- Specific Energy Consumption to reduce the energy utilisation
- Avoid penalty imposed by electricity board

## Greenovative Impact



- Micro Level implementation of devices for comprehensive data
- Closed loop control system avoided penalties imposed by electricity board
- Achieved cost savings about 10Lakhs INR
- Reduction in Green House Gases emissions 212614 MT
- Renewable energy by Installation of the solar plant and selling the power to the grid
- Customized reporting to meet ISO 50001 guidelines

## Cost Impact



153327 MWh  
of energy saving achieved

## Water Efficiency Impact



23.6%  
of water efficiency  
improvement was observed



## Case Study

Leading Innovative Research and Developing World-Class Pharmaceutical Manufacturing, Supply Chain, and Commercialization Capabilities.

Lupin has built 18 cutting-edge production facilities in prime sites in Brazil, Mexico, the United States, and India as part of its global operations. Lupin is able to efficiently meet the various demands of patients all over the world because of its extensive presence, which also helps to improve healthcare outcomes.





## Problem Statement

- Enhancing the Energy Performance of the Plant
- Establishing Benchmarks for Individual Processes
- Optimizing Specific Energy Consumption
- Conducting Distribution Loss Analysis

## Greenovative Impact



- Greenovative implemented 157 energy meters across Lupin's plant to accurately map energy consumption.
- Data accessibility became easier due to the EMS web server
- Ability to showcase Cost analysis for peak & non-peak hours
- Customised reporting for energy vs. production comparison

## Cost Impact



10 %

energy savings were achieved due to EMS's ability to optimise performance effectively

## Engagement Extensions:



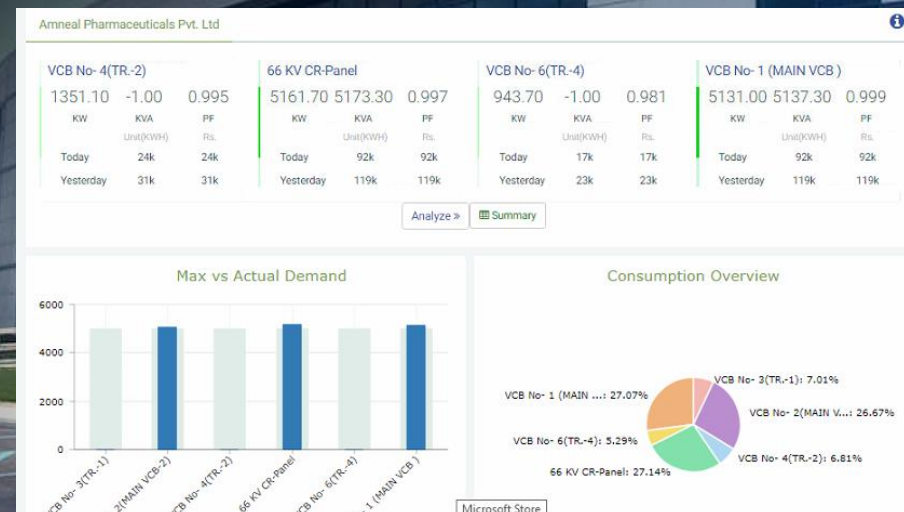
- Extending this service to 5 more plants
- Flow and stem meter implementation
- Child water system improvement program



## Case Study

Leading international pharmaceutical company Amneal Pharmaceuticals does business as a vertically integrated corporation in the generic and speciality pharmaceutical industries.

Amneal maintains a strong presence throughout 18 production plants spread across India, Mexico, the United States, and Brazil. The company has a significant global footprint.





## Problem Statement

- Mitigate and reduce harmonic disturbances
- Accurately monitoring of motors
- Boilers performance optimisation
- Real-time monitoring of temperature-sensitive areas
- Simplifying data collection and analysis processes

## Greenovative Impact

- Resource Management Improvement Using PLC Integration
- Benchmarking for Effective Manpower Utilisation and Energy Performance
- Maximum Hours with Machine Running
- A proactive strategy to spotting irregularities



## Future Plans for Greenovative and Amneal Pharmaceuticals:



Replication of Solutions  
at Other Locations



Development of Overall Equipment  
Effectiveness (OEE) Analysis

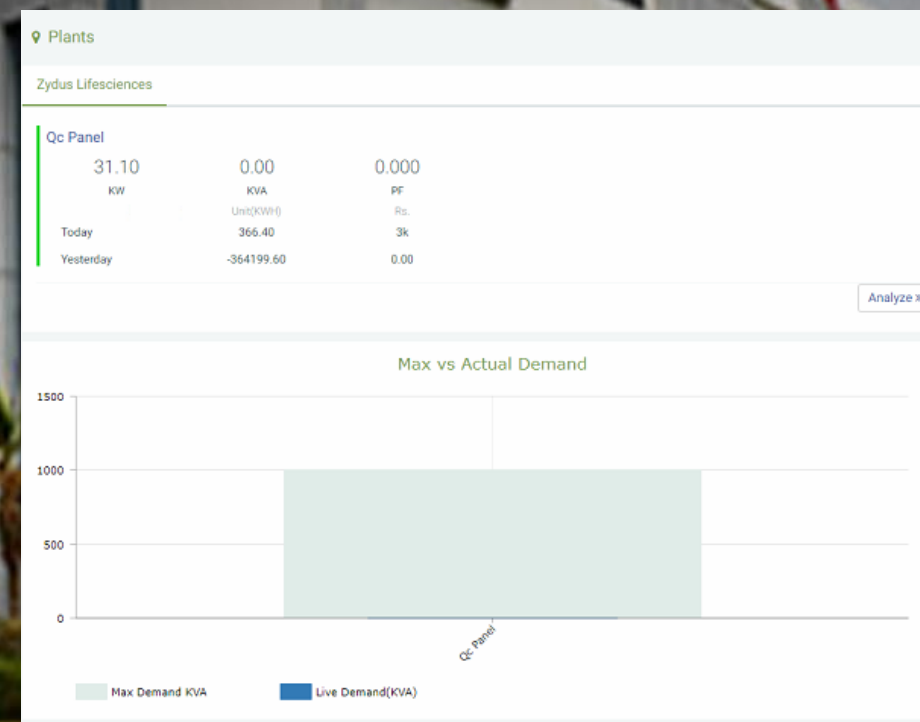


Implementation of Self-  
Healing Techniques



## Case Study

An important Indian pharmaceutical business named Zydus Cadila runs a fully integrated worldwide healthcare system. The company is still committed to maintaining and raising environmental, occupational health, and safety standards. It has a significant presence in regulated markets including the US and Europe (France & Spain), as well as well-known markets in Latin America and South Africa. In order to ensure the welfare of both its personnel and the environment, Zydus Cadila continues to invest significant resources in maintaining and raising these standards.



## Problem Statement

- Remote Monitoring of Electrical Energy Water
- Management with SANKEY Diagram
- Demand analysis to understand the energy requirements
- Critical Load Analysis
- System Performance Enhancement

## Greenovative Impact



- Achieving compliance with the global EnMS standard, ISO 50001.
- Provides ENPI reports that give information about energy performance and efficiency.
- Performing distribution loss analysis to cut down on energy waste and save money.
- Remote monitoring to reduce errors.

## Cost Impact



10 %

Reduction in overall energy consumption through system optimisation

## Future Extensions:

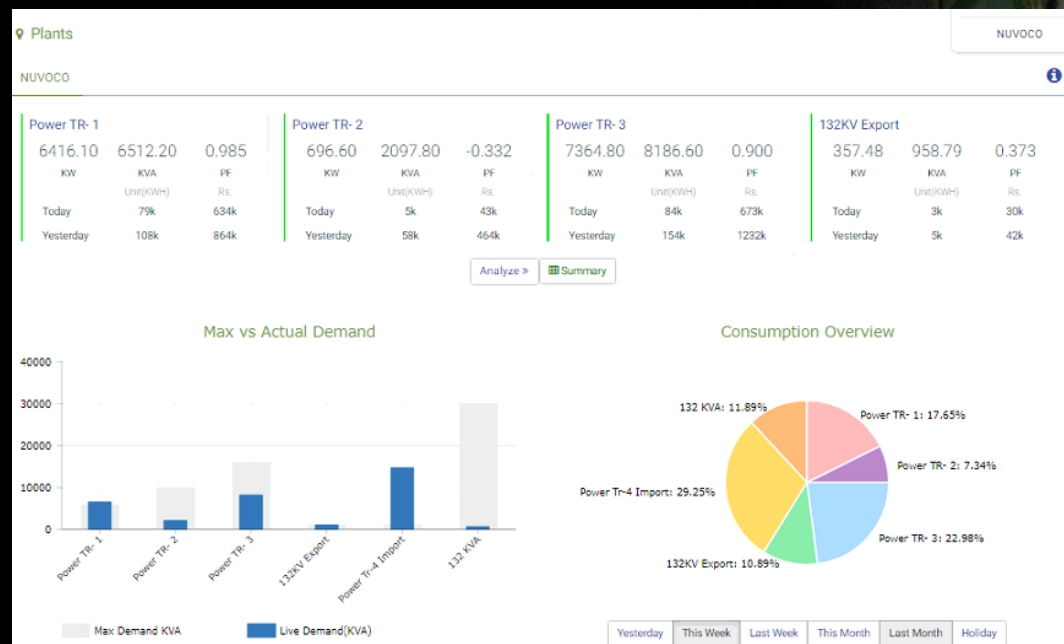


- Load Analysis for Solar Plant Design
- Implementation of Machine Learning and Artificial Intelligence
- Advanced Asset Performance and Diagnosis



## Case Study

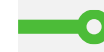
A significant player in the Indian construction market, Nuvoco Vistas Corp. Ltd., runs over 65 ready-mix concrete factories nationwide in addition to seven cement plants. The business has made a reputation for itself in the sector by having a significant presence in India's major cities and towns.





## Problem Statement

- Availability of real-time and accurate data monitoring solutions
- Integration of multiple devices across the plant
- Enablement of automated reporting of critical equipment
- Consolidated critical operational data from various sources



## Greenovative Impact



- By streamlining the procedure, a cost-effective solution is ensured.
- An integrated view of the facility in real-time.
- Customised dashboards made to meet the individual requirements of several departments.
- Production and the energy vault are integrated to reduce Specific Energy Consumption (SEC).
- Automates the production of daily reports to save users' time.
- A platform that is expandable and tailored to meet the changing demands of Nuvoco Vistas Corp.



## Future Extensions:

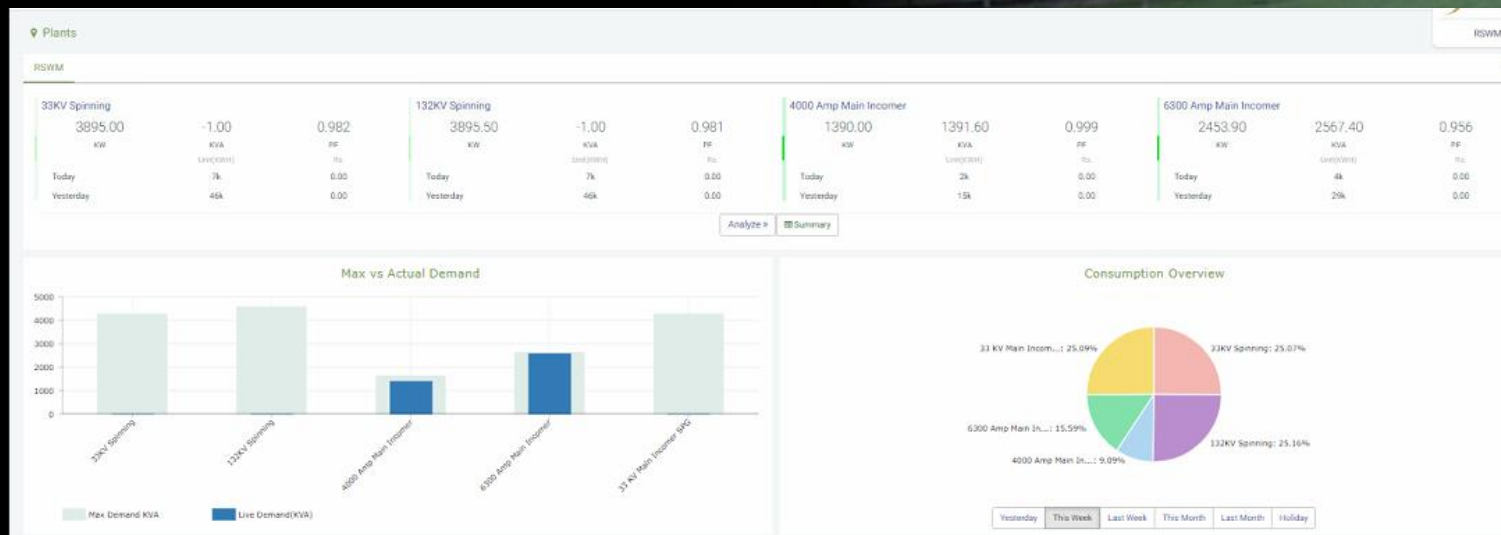
- Integrate air compressor controllers into the existing system.
- Aims to integrate water flow and seam meters into the system to gain insights into water usage.
- Develop a customised Overall Equipment Effectiveness (OEE) suite specifically.
- Integration of another 3 plants on the same platform





## Case Study

With 120,000 spindles installed, RSWM Textiles Pvt Ltd. is a significant textile business. They specialise in producing 100% cotton/compact yarn, grey fabric, and synthetic/cotton blended yarn. RSWM Textiles Pvt Ltd., a reputable supplier in the market renowned for their quality and creativity, with an annual revenue of roughly 5000 Cr. To lessen their influence on the environment, they consistently implement sustainable practices and adjust to market demands.



## Problem Statement

- Managing and maximising a significant 2.1 million kWh energy consumption.
- Overcoming the difficulty of satisfying production needs within a 15,000 kVA authorised demand while reducing energy waste.
- Efficient use of the captive power plant while maintaining a balance between grid and captive power.
- 290 locations are continuously monitored and their data is analysed to find chances for energy savings.

## Greenovative Impact



- The company's current electrical network and LAN connections were not changed in any way during the implementation of the proposed system.
- In order to avoid the requirement for specialised metres, Greenovative's solution, GreenErgy, effortlessly integrated with the digital energy metres that were already in place and had RS 485 ports.
- The system's presentation of energy data in various formats made it possible to analyse the energy profile effectively. This made it possible for RSWM to pinpoint areas of energy waste and potential for energy savings.

## Cost Impact



15000 KWH/Day  
energy saving

## Efficiency Impact:



60  
man hours/month saved

## Future Extensions:



10% savings

on equipment breakdown due to the preventive maintenance system

# Engagement Value additions that **Greenovative** can provide



## **SUCCESS ENABLEMENT**

- **CUSTOMER-SPECIFIC FEATURE-FUNCTIONALITY MAPPING** : Collaborated and recorded process documentation of user + business + industry functional alignment and feature mapping for relevant and right scoping, coverage and implementation
- **USER ADOPTION** : User group adoption through 2 level onboarding process of transitioning new users into new workflows via the platform + Optimization for user efficiency and effectiveness
- **TRAINING MICROMODULES** : training combination of virtual live and recorded versions on platform, features, data inputs and outputs, user experience flow, report formats and faq's



## **VALUE AND IMPACT ADVISORY**

- **DATA BACKED IMPACT IMPROVEMENT SESSIONS**: Milestone agreed data analytics, gap analysis, improvement pointers and impact metrics change – provided data-access available
- **BEST PRACTICE SHARE AND BENCHMARK WORKSHOP**: Captive and external intelligence backed benchmarking across user segments/levels. Best practice shares with our sme's and engagement experiences globally
- **INSIGHT SHARE**: Quarterly share of innovations, emerging trends, sectoral dynamics and regulatory/compliance updates



# Client Success Leaders



Vinit  
Kulkarni

Strategic Business  
Success



Harshal  
Maheshwari

Product & Platform  
Success



Narayanan  
Rajagopalan

Technical  
Success



Ajinkya  
Shinde

Customer Strategic  
Advisory



Gauri  
Sharma

People & Culture

Our expert team combines diverse expertise and deep industry knowledge to deliver innovative strategies and achieve remarkable outcomes.

# Impact Measures



A holistic way towards cost-cutting, efficiency and sustainability



Energy consumption  
reduced by ~18%



Maintenance cost  
reduced by ~20%



Productivity  
increased by ~7%



Asset downtime  
reduced by ~15%



Reduction in carbon  
footprint by ~40%



Man-hours reduced  
by ~20%

Note: These are aggregated data points that can differ from case to case.

# Thank You



“At Greenovative, we aspire to be a pioneering company propelled by technology innovations, creativity, and teamwork. Our main goal is to advance sustainability and urge the ecosystem as a whole to reduce its carbon impact.”

Let's work together to create a future that is greener and more sustainable.”



Greenovative

## Greenovative Energy Pvt. Ltd.

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## Our Global Presence

India | Oman | UAE | Jordan | Egypt |  
KSA | Bahrain | Kuwait |



[www.greenovative.com](http://www.greenovative.com)