Arvato Systems Whitepaper

Turning Climate Goals into Competitive Advantage

Sustainable Energy, Asset, and Environmental Management with green.screen

ARVATO SYSTEMS

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1 AT A GLANCE: WHY ACT NOW? – EXECUTIVE SUMMARY

Climate protection and sustainable resource management are becoming decisive competitive factors for companies in all industries. Without a clear commitment to sustainability and active measures, companies increasingly risk disadvantages in the market. At the same time, energy prices and regulatory requirements are rising, meaning that strategic sustainability management now plays a key role in business success.

green.screen is an IoT platform developed by Arvato Systems for active climate protection – a holistic, cloud-based solution for energy, facility, and environmental management. The platform enables companies to achieve their climate goals, increase energy efficiency, and make sustainability measurable. Through complete transparency of all energy and resource flows, green.screen identifies potential savings and optimizes processes. Efficiency measures, which are highlighted via green.screen using key figures and benchmarking, lead to immediate cost reductions across all locations. At the same time, the comprehensive documentation of all sustainability activities creates the basis for transparent communication of the carbon footprint to customers, investors, and auditors.

In short, green.screen enables companies to embed sustainability in all processes, reduce energy consumption and emissions, and at the same time save costs and gain efficiency. Sustainable action becomes visible, controllable—and economical. Companies that rely on data-driven climate impact management with green.screen are preparing themselves for the future and securing a tangible competitive advantage through responsible action.

2 YOUR ADVANTAGES WITH GREEN.SCREEN

Transparency & control

Complete visibility of energy and resource consumption throughout the entire company – down to every asset and every location. This transparency forms the basis for informed decisions and targeted efficiency measures.

Cost reduction & efficiency

Comparative and potential analyses identify hidden inefficiencies. green.screen shows where excessive consumption occurs so that immediate savings measures can be initiated and operational processes optimized.

Regulatory compliance

Professionalized sustainability reporting (ESG/ CSRD) and an eligible BAFA-listed energy management system (ISO 50001). green.screen simplifies compliance with legal obligations and provides auditable evidence of your climate protection activities.

Competitive advantage

Sustainability becomes a measurable success factor. Documented emission reductions and transparent ESG data strengthen your image as a responsible company and increase your attractiveness to customers, partners, and investors.

3 THE CHALLENGE: CHANGING MARKET TRENDS AND REGULATIONS

Companies face significant challenges in the area of energy and sustainability management. On the one hand, rising energy prices and ambitious climate targets are driving the need for action, while on the other hand, many companies still lack the necessary data transparency and integrated processes to take effective countermeasures.

Lack of transparency in consumption: It is often unclear where exactly high costs and emissions arise. „The energy bill is high – but where exactly do the costs arise?" – this question remains unanswered with pure total values. Many companies only receive aggregated key figures, which conceal inefficiencies. It is difficult to deduce from general consumption values which locations, systems, or devices are responsible for disproportionate energy consumption. The same applies to environmental indicators: potential environmental impacts remain hidden as long as only high-level data is considered. Without detailed analysis, however, there is no basis for taking targeted efficiency measures.

Heterogeneous tool landscape: In many companies, energy data, asset data, and sustainability metrics are distributed across various isolated systems. Data gaps and manual consolidation make holistic management difficult. In addition, traditional methods (e.g., Excel evaluations) are prone to errors and do not scale well. There is a lack of real-time insights and automated workflows, which makes proactive control nearly impossible.

Regulatory and social pressure: Sustainability reporting is becoming mandatory. At the political level, far-reaching requirements have been adopted in recent years: Since 2014, there has been a CSR reporting requirement in the EU, which has been significantly expanded by the Corporate Sustainability Reporting Directive (CSRD). Starting in fiscal year 2024, all large companies and listed SMEs must report comprehensively on ESG issues (including information on environmental goals, social and governance aspects). National laws such as the German Energy Efficiency Act (EnEfG), which is based on EU directives, make energy saving a mandatory task: public authorities, large companies, and data centers must achieve and demonstrate specific efficiency targets. Without professional data collection and monitoring, these requirements are almost impossible to meet. At the same time, investors and customers are increasingly demanding credible climate protection measures. A well-founded sustainability report is now considered an indispensable proof of performance for corporate success. Companies that hesitate in this regard risk losing acceptance and trust in the market.

Complex facilities and distributed structures: Companies with multiple locations or complex technical facilities (e.g., in industry, energy supply, or real estate management) in particular struggle with the challenge of maintaining an overview everywhere. Without clear comparative values, it remains unclear where the greatest need for action lies—and which measures are truly effective. Hundreds of properties or machines generate vast amounts of measurement data that are almost impossible to evaluate manually. As a result, efficiency potential remains untapped and operating costs are higher than necessary because there is no systematic benchmarking. Similarly, the fragmentation of data (e.g., separate systems for production, building management technology, and environmental indicators) makes overall optimization difficult.

Rising stakeholder expectations: Beyond mere compliance, sustainability is becoming a social and economic must-have. Business partners pay attention to the carbon footprint of their supply chain, consumers demand environmentally friendly products, and employees expect their employers to act responsibly. Sustainable practices are already influencing purchasing decisions and contract awards. Companies therefore feel obliged to reduce emissions holistically and conserve resources – not only for the sake of compliance, but also to remain competitive in the long term. This also includes making successes visible: you can't manage what you don't measure. If you want to become climate neutral, for example, you need to know your starting point precisely and document your progress comprehensively.

These developments – high energy and environmental costs, new laws, and a shift in values among customers and investors – require a rethink. What is needed are integrated solutions that bring granularity to consumption data, replace isolated solutions, and automatically process sustainability metrics. This is where green.screen comes in to turn the problems mentioned above into opportunities.
Today's companies need fine-grained data and integrated systems to operate more sustainably and efficiently. The goal is to eliminate „blind spots" in energy and environmental consumption, consolidate isolated solutions, and turn compliance into opportunities. The next section describes how green.screen, as a modern solution approach, addresses precisely these requirements.

4 THE SOLUTION: INTELLIGENT SUSTAINABILITY MANAGEMENT

green.screen was designed to address the challenges outlined above with a holistic approach. It is a scalable, cloud-based IoT platform that integrates energy, facility, and environmental management into one system . The solution relies on modern data collection and combines it with specialized expertise in sustainability management.

What is green.screen?

green.screen is Arvato Systems' „Climate Impact Management Platform" for implementing climate targets and increasing energy efficiency. Operated as software-as-a-service in a cloud environment, the platform offers high scalability and availability without the need for complex installations at the customer's site. green.screen fully covers three core areas:

Asset management

green.screen enables end-to-end transparency of asset operations through the central recording and management of all relevant asset parameters – such as production machines, building management systems, and decentralized generation assets (such as photovoltaics or combined heat and power assets). Utilization rates, operating states, and consumption values can be systematically mapped for each technical unit. The integrated monitoring system provides proactive notifications in the event of limit violations or malfunctions, enabling maintenance processes to be made more efficient. In addition, asset-specific key figures (e.g., specific energy consumption per output unit or available flexibility in storage systems) are calculated automatically. This creates a sound data basis for optimizing energy consumption and asset operation.

Energy management

Recognized as an energy management system in accordance with ISO 50001, green.screen supports comprehensive and structured energy data management. Measured values from all stages of the energy chain – from generation and distribution to consumption – can be consolidated in appropriate detail. Short-cycle consumption data, load profiles, and anomalies can be identified in near real time. The system offers functions for defining EnPIs (energy performance indicators) and for monitoring energy efficiency targets at various levels, from the entire company to individual technical systems. Potential savings in kWh or CO_2 can be continuously reviewed and compared with historical values.

Environmental management

Collection of all environmentally relevant data (e.g., consumption, emissions, waste) and conversion into CO_2 equivalents. The platform supports ESG reporting within the framework of CSRD reporting requirements and allows companies to accurately report their sustainability status at any time. Climate protection activities and progress can be quantified and documented in a traceable manner using green.screen.

TECHNOLOGY AND ARCHITECTURE

green.screen relies on an open, IoT-enabled architecture to bring together data from a wide variety of sources. A „multi-protocol headend“ ensures that all relevant measurement data is imported automatically and can also be supplemented manually if necessary. For example, the platform supports:

Automated meter data collection

Smart meters and sensors can be continuously connected via standardized protocols (e.g., OPC-UA, MQTT) or via MSCONS import by email/FTP. In a reference application at ENGIE Germany, for example, over 2,000 decentralized eBox data loggers were connected to green.screen, which send consumption data to the system every 15 minutes. This high frequency ensures near-real-time monitoring. The integrated devices log on to the platform independently; after physical installation on site, configuration, master data import, and dashboard generation are largely automated.

Manual data entry

For smaller locations or less frequent data points, green.screen offers simple ways of manual entry. CSV imports of consumption data, e.g., from Excel lists, can be carried out easily. There are also digital reading sheets for manually entering meter readings (mobile entry possible). This versatility ensures that all relevant key figures end up in the system even without fully automated sensor technology.

Integration into existing system landscapes

green.screen can be easily integrated into existing software systems. Standard interfaces can be used to connect ERP systems (such as SAP for energy cost billing) or building management systems bidirectionally. A predefined interface to building automation enables HVAC and building data to be transferred to the platform. External emissions databases or weather services can also be linked to take other influencing factors (e.g., temperature for weather adjustments) into account. Thanks to open APIs and modularity, green.screen fits seamlessly into an existing IT landscape and functions as a central sustainability data hub.

Data management and analytics

The platform is designed for big data and efficiently manages long-term time series. Powerful formula calculation and short-cycle processing of current values enable evaluations in virtually real time. Based on this data, green.screen offers comprehensive analysis and visualization tools: Users can create interactive dashboards, configure charts (lines, bars, heat maps, etc.), and generate reports. Particularly noteworthy are the benchmarking and potential analysis features: Here, data point collections can be compared under various dependencies—e.g., energy indicators by region, by production line, or weather-adjusted per square meter. This helps to identify „black sheep“ (i.e., the most inefficient objects) at a glance.

Organizational chart and rights concept

In order to accommodate often heterogeneous organizational structures, green.screen allows the company hierarchy to be mapped in the form of organizational charts. Data points (e.g., meter readings) are assigned to specific consumers and organizational units, from the top of the company to the individual asset. This makes it possible to see at any time which unit contributes what share to total consumption or target achievement. The fine-grained role and rights concept ensures that each user only sees the clients or areas relevant to them – an essential feature, especially for service providers with multi-client operations. For example, external energy consultants can serve a client separately, while internal managers run group-wide evaluations.

green.screen maps a consistent technology stack that brings together the areas of data integration, monitoring, analysis, and reporting within a single platform. The architecture is based on a three-step approach: data collection, evaluation using defined key figures and comparative values, and derivation of measures. After collection, the data is analyzed using KPIs, benchmarks, and automated alerts to identify specific options for action. The integration of energy management and environmental reporting within a single solution makes it possible to cover both operational and strategic requirements in the area of sustainability. This positions green.screen as a comprehensive tool for the data-based management of energy and sustainability key figures, with a focus on transparency, consistency, and efficiency in data processing and evaluation.

5 YOUR BUSINESS AND STRATEGIC ADDED VALUE

Using green.screen brings tangible business and strategic advantages. The combination of cost savings, efficiency gains, and improvements in sustainability profile creates a triple added value that promotes both the financial and sustainability goals of a company:

Absolute energy and cost transparency

green.screen provides a detailed analysis of energy consumption points and causes. This gives companies precise insights into which locations or processes have the highest energy requirements and thus serve as starting points for efficiency improvements. The ability to allocate consumption data according to the source supports the establishment of clear responsibilities within the organization and promotes the identification of optimization potential at all levels.

Direct cost reductions through increased efficiency

Based on the consumption data collected, optimization and savings potential can be systematically identified and evaluated. With green.screen, for example, load peaks can be identified, idle times of systems analyzed, or inefficient devices located in order to initiate targeted improvement measures. The platform supports the simulation and tracking of energy efficiency measures, allowing investments to be prioritized based on data and their effect to be quantitatively proven. This creates a sound basis for decision-making, enabling resources and budgets to be used efficiently and the effectiveness of measures taken to be objectively verified.

Achieving sustainability goals and reducing emissions

The platform has been proven to support companies in achieving their climate and sustainability goals. Through the structured collection and evaluation of energy data, potential for reducing greenhouse gas emissions is identified—for example, by uncovering inefficient or environmentally harmful processes and highlighting opportunities for optimization. green.screen enables the continuous monitoring and documentation of CO_2 reductions based on traceable key figures. Environmental impacts can be quantified on a location- or product-specific basis, and appropriate measures can be derived in a targeted manner. This makes it possible to transparently document progress in sustainability and systematically manage the achievement of goals.

Fulfillment of compliance and reporting obligations

The software solution provides a central register for all supporting documents—from energy savings for funding applications to ESG key figures for reporting. green.screen efficiently supports the creation of CSRD-compliant reports: relevant data on environmental, social, and governance aspects is consolidated and provided in a structured manner. This eliminates the need for time-consuming manual data collection; the required information is available in a timely and verifiable manner. This helps to reduce administrative effort and the risk of errors. In the context of external audits, such as energy or sustainability audits, the platform enables consistent and traceable access to all necessary information. Companies can comply with regulatory requirements efficiently and in an audit-proof manner.

Increased operational efficiency and productivity

Beyond energy issues, green.screen also ensures process improvements. Alerts in the event of deviations (such as system malfunctions or unusually high consumption) can reduce downtime and enable more proactive planning of maintenance work. In addition, centralizing data in a single platform saves a lot of time: reports that used to take days or weeks to compile manually can be generated much more easily with green.screen. Employees can spend more of their working time on value-adding activities instead of searching for and preparing data.

Creation of competitive advantages & image enhancement

A key added value is the ability to effectively address regulatory and market requirements through valid and traceable sustainability reports. By using green.screen, companies gain a basis for demonstrating their sustainability performance in a consistent and transparent manner, which is increasingly required in cooperation with customers, partners, and regulatory authorities. The systematic management of energy and environmental targets supports the demonstration of a willingness to innovate and responsible resource management—criteria that are becoming increasingly important in the context of procurement, funding applications, and international competition. In addition, a data-based approach can open up new business areas and strengthen the company's position in the market. The consistent integration of sustainability measures promotes employee identification with corporate goals and facilitates internal control. Overall, green.screen provides a structured approach to strategic sustainability management that addresses both compliance with legal requirements and the company's efficiency and future viability.

green.screen offers both quantitative and qualitative added value: from hard savings in euros and kWh to softer factors such as risk minimization and speed of reporting, to competitive advantages through sustainability leadership. The following table clearly summarizes some of the most important benefits:

Benefits	Description
Cost transparency	Clear allocation of consumption and costs to their sources (locations, systems, processes) – answers the question "Where exactly are the costs incurred?"
Savings	Identified potential leads to documented reductions in consumption and lower operating costs (energy, maintenance).
Compliance & evidence	Automatic preparation of data for energy reports – audit-proof chain of evidence.
Process optimization	Early warnings in case of deviations, better utilization of equipment, less manual data collection – higher productivity.
Strategic advantage	Meeting climate targets and professionalizing sustainability management strengthen market position and company value.
Image & acceptance	Profiling yourself as a sustainable company promotes acceptance in society and increases your attractiveness to customers, investors, and talent.

The analysis shows that green.screen can be used to achieve both short-term operational improvements, for example by reducing operating costs, and longer-term strategic effects such as stronger market positioning and an improved sustainability profile. The solution supports companies on several levels – financially, ecologically, and organizationally – and enables data-based control of relevant processes.

6 YOUR BENEFITS – TAILORED TO EACH ROLE

The following sections take a closer look at examples of specific challenges and the individual benefits for different professional user groups. They provide a practical overview of how green.screen can be optimally integrated and used depending on the area of application..

Managing directors/decision-makers

Managing Directors, and decision-makers are often confronted with the difficulty of managing ESG, energy, and asset management across different, non-integrated systems. This leads to increased effort within the company, duplicate costs, and media breaks. Using a central platform such as green.screen can bundle asset, energy, and environmental management in one system: a central data model ensures consistent integration. This results in greater transparency for business decisions, lower operating costs, and efficient and audit-proof compliance with regulatory requirements within a single tool.

Facility managers

The challenge for asset management in customer service is to efficiently monitor numerous technical assets. The often confusing display of existing dashboards makes it difficult to compare asset efficiency and complicates targeted benchmarking. With the help of green.screen, complex energy inputs and outputs can be mapped in a structured manner and a well-founded potential analysis can be carried out. Key figures such as the utilization rate of individual systems or components are visualized transparently and can be compared directly with each other. In this way, optimization potential can be identified, efficiency increased, and operating and maintenance costs reduced – all within a central system.

Facility managers

Facility managers are often faced with the task of transparently evaluating the energy efficiency of different properties. Without comparable key figures, it is often difficult to identify the need for action and effective measures to reduce energy consumption. By using green.screen, comparative and potential analyses can be carried out that clearly map complex energy flows and enable the documentation of measures. This makes inefficient properties visible, measures can be prioritized in a targeted manner, and the energy efficiency of properties can be optimized in a traceable and data-based manner.

Energy managers (audit compliance)

Energy managers are faced with the task of documenting well-founded decisions to reduce energy consumption in a comprehensible and audit-proof manner. Often, there is no comprehensive overview of which measures are actually effective, how the individual organizational units contribute to achieving the goals, and how decisions can be justified to auditors and stakeholders.

green.screen provides a remedy by providing a clear structure with organizational charts, the assignment of data points, and individual dashboards. This enables a comprehensive, transparent view of all energy flows – from company management to individual systems.

This makes it easier to compare and prioritize measures, document the achievement of goals, and ensure auditability. Documented successes also contribute to an improvement in image. In this way, green.screen provides a factual basis for transparent and effective decisions in energy management.

Energy managers (cost efficiency)

Energy managers are often faced with the challenge of accurately allocating high energy costs to locations and facilities. Aggregated key figures are often insufficient for this purpose. Inefficiencies remain undetected and the causes of increased energy consumption are difficult to identify.

The use of green.screen enables a detailed analysis of all energy flows – from generation to consumption. This reveals potential savings and supports targeted measures to increase energy efficiency. Comparative and potential analyses, a structured assignment of measuring points to consumers, and the mapping of the company structure in organizational charts provide a comprehensive overview of the energy landscape, differentiated by energy type, location, or technical unit.

The results are traceable reductions in consumption, optimized operating processes, and a measurable increase in energy efficiency. Data-based control makes sustainability more visible and controllable, as well as economically viable.

Sustainability managers

Sustainability managers in companies with multiple locations and different energy sources often face the challenge of accurately assigning environmental and energy indicators. Conventional indicator systems often leave open the question of where inefficient processes or increased environmental impacts arise. This makes it difficult to identify the exact causes of resource consumption and greenhouse gas emissions.

green.screen offers the possibility to evaluate energy flows and other environmentally relevant data in detail. This makes it possible to identify which locations, facilities, or consumers contribute particularly to resource use. Comparative and potential analyses, as well as a transparent representation of the organizational structure, make reduction potentials more visible and support targeted measures to improve the environmental balance.

Using the platform leads to greater transparency and control over environmental and energy data. This makes documented reductions in consumption, optimized processes, and the implementation of sustainability strategies measurable and traceable.

Companies in the service sector

In the service sector, for example in real estate or asset inspections and in the field of energy optimization, challenges often arise due to fragmented data systems, media breaks, and the use of individual solutions. The lack of clear role and authorization concepts makes it difficult to manage tasks across multiple customers or properties. A multi-client capable platform such as green.screen enables the structured management of different orders and responsibilities in one system. A clear separation of responsibilities and an integrated analysis function allow energy requirements, asset functionality, and emissions to be systematically evaluated. In this way, optimization potential can be identified and documented, which contributes to a better overview and traceability overall.

Services in municipalities

Municipal service providers such as larger municipalities, municipal associations, or municipal companies are increasingly operating central energy and environmental management systems. The aim is to provide other cities, municipalities, or institutions with structured, data-supported, and legally compliant support in recording, evaluating, and optimizing energy consumption and environmental data.

7 HOW TO SUCCESSFULLY IMPLEMENT IT IN YOUR COMPANY

The successful implementation of green.screen requires a structured approach – both technically and organizationally. As a cloud solution (SaaS), the software itself can be deployed quickly; the focus is on connecting data sources, onboarding users, and adapting processes. The most important aspects of introducing and integrating green.screen are summarized below:

Project preparation & stakeholder involvement

At the outset, relevant areas such as energy management, sustainability, IT, and, if applicable, production should be included in the planning. In a short workshop, existing data sources and reporting requirements are recorded, on the basis of which an integration plan is drawn up. A clear project mandate supports implementation

Technical integration of data sources

Technical integration involves connecting existing measurement systems and data sources via standard protocols or interfaces. A pilot site is useful for testing. Different meter types and formats are supported, and interfaces to legacy systems can usually be implemented via export and import options. Data quality (completeness, plausibility) should be checked during the connection process.

Setting up the organizational structure in the system

Once the data sources have been connected, the organizational structure is mapped in green.screen, for example by location or department. The structure should meet reporting requirements and is coordinated with the relevant departments. The platform enables different views to be mapped in parallel, for example according to ESG criteria or technical units.

User roles and training

User rights are assigned on a role-based basis and can be flexibly customized. Energy controllers are given access to analyses, while site managers can only see their own data. User training focuses on the most important functions to ensure quick and efficient use.

Pilot phase & refinement

Productive operation is tested in a short pilot phase (2–3 months). The aim is to check whether all relevant measurement points are covered and the data quality is correct. Standard dashboards can be adapted to specific requirements. User feedback is used to set up the system efficiently and make any necessary adjustments.

Rollout to the entire company

After completion of the pilot phase, green.screen is gradually rolled out to other organizational units. The proven structures and connection paths facilitate efficient scaling. A phased approach is recommended for larger companies. A clear contact person simplifies coordination and supports cross-departmental implementation.

Integration into existing processes

For efficient use, green.screen should be seamlessly integrated into existing processes, for example by connecting it to existing reporting structures or action management. This allows data evaluation and reporting to be automated and standardized. Regular reviews ensure knowledge transfer and enable continuous optimization.

Support and continuous improvement

After go-live, a support concept ensures ongoing assistance. Updates and new functions are provided regularly. A central contact person within the company coordinates adjustments and informs users. Additional data sources can be integrated as needed. User feedback is incorporated into the further development of the platform in order to promptly meet practical and regulatory requirements.

8 CONCLUSION: YOUR NEXT STEP TOWARD SUSTAINABLE SUCCESS

Companies are under increasing pressure to provide binding proof of sustainability and resource efficiency. The introduction of a central platform such as green.screen provides a structured and scalable basis for this. It supports the central collection of data, the standardization of processes, and the efficient management of regulatory compliance. Synergy effects result from the combination of energy, environmental, and financial data, which creates the basis for targeted and transparent control measures.

Think holistically

Integrated energy and sustainability management combines technical key figures and sustainability KPIs on a single platform. green.screen reduces data silos, enables the joint evaluation of energy, environmental, and financial data, and allows cross-departmental goals to be pursued efficiently.

Data-based decision-making

green.screen enables fact-based control in sustainability management. Key figures on energy and resource consumption as well as clear KPIs create transparency and traceability. Progress and deviations are systematically recorded and serve as the basis for objective decisions within the company.

Continuous improvement

green.screen supports the monitoring and control of sustainability measures as a continuous improvement process. The platform enables data-based recording and evaluation of key performance indicators, allowing trends to be identified at an early stage and measures to be implemented according to the Plan-Do-Check-Act principle. Function updates and modular expandability ensure adaptability and future-proofing. The integration of various data sources (e.g., energy, water, waste) promotes efficiency and transparency in sustainability management.

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