milvian group

INDUSTRY SOLUTIONS
CONTROLLED ENVIRONMENTS

Optimizing Energy and Climate Control • Resource Allocation • Regulation and Compliance

THE **CHALLENGE**

Controlled environment agriculture is poised to capitalize on advanced environment agriculture technologies, including vertical farming integration, to meet growing demand for locally-sourced and diverse crops, including ingredients for the expanding plant-based food sector. These companies can also benefit from carbon credit markets, aligning operations with sustainability trends and creating new revenue streams.

Yet large-scale controlled environment businesses face significant difficulties in optimizing energy consumption for climate control while simultaneously managing water resources efficiently, as both are critical for maintaining idea growing conditions and represent major operational costs. Among other challenges, these businesses also face challenges finding and retaining skilled workers.

To address operational challenges and leverage market opportunities, controlled environment companies can implement **automation**, **AI**, and **data-driven agriculture technologies**, enabling more efficient resource management, improved yield prediction, and adaptive production strategies that respond to market trends and consumer preferences.

MILVIAN GROUP

THE **SOLUTION**

Predictive maintenance
- Use sensor data to monitor equipment performance and predict potential failures
- Schedule maintenance before issues occur, reducing unexpected downtime

Crop health monitoring
- Use computer vision to detect early signs of pest infestations or diseases
- Monitor plant growth rates and adjust nutrients accordingly
- Optimize harvest timing based on crop maturity data

Climate control optimization
- Use AI to learn optimal environmental conditions for each crop variety
- Implement micro-climate adjustments within different greenhouse zones

Water management
- Use soil moisture sensors to optimize irrigation schedules
- Detect leaks or inefficiencies in water distribution systems
- Implement precision irrigation based on plant needs and environmental conditions

Energy optimization
- Analyze temperature, humidity, and light data to fine-tune climate control systems
- Implement dynamic adjustments based on weather forecasts and plant growth stages
- Identify and address energy inefficiencies quickly to mitigate costs

Quality control
- Use computer vision to grade produce automatically
- Ensure consistent quality across harvests

Resource allocation
- Track productivity across different greenhouse sections
- Allocate labor and resources more efficiently based on real-time needs

Yield prediction & market alignment
- Use growth data to accurately predict harvest times and yields
- Align production with market demand to optimize pricing and reduce waste

MILVIAN GROUP

Carbon footprint reduction
- Monitor and optimize CO2 levels for plant growth while minimizing emissions
- Track overall environmental impact to support sustainability initiatives

Automated reporting & compliance
- Generate automated reports for regulatory compliance
- Provide real-time data access for audits and certifications

By integrating data-driven approaches, controlled environment organizations can significantly improve operational efficiency, reduce resource consumption, and enhance crop quality and yield. The holistic use of smart technology equips greenhouse businesses to address while capitalizing on market opportunities.

Invest in Sustained Growth

By equipping your business with our leading-edge preventative maintenance solutions, Milvian Group helps greenhouse operations leaders to invest in reliability, efficiency, and sustained business growth. Underpinned by the Milvian Mark of exceptional service, Milvian Group helps you turn the challenges of today's business environment into opportunities for tomorrow. For a customized solution to keep your business running smoothly, reach out to us today.

About Milvian Group

Industrial, commercial, and public sector customers seeking to enhance situational awareness of their machinery, assets, and environment turn to Milvian Group for data-driven solutions that improve operational decision-making and costs reductions. As an applied technology company, Milvian Group recommends, integrates, and implements top-tier hardware and cloud-native services, including IoT, data analytics, and AI technologies.

Milvian Group solutions are designed to solve business challenges, improve work conditions, and achieve sustainability goals by increasing uptime, enhancing machine availability, improving safety, and reducing resource consumption. The "Milvian Mark" represents our commitment to setting the gold standard for service and support in the tech industry.

https://milvian.group/ 1-833-645-8426
© 2024 Milvian Group Ltd.

3

MILVIAN GROUP