

Empowering Manufacturing: Riello UPS Transforms Operations at Luuka Plastics



INTRODUCTION

Luuka Plastics, headquartered in Kampala, Uganda, is a leader in the manufacturing of flexible packaging materials and plastic products. With a commitment to international quality standards and innovation, Luuka serves a diverse market across Uganda, Kenya, Tanzania, Rwanda, Burundi, Congo, and South Sudan. Holding ISO 9001:2015 certification, the company offers a wide range of solutions, including high-quality laminates, cold seals, hot-filled laminates, pouches, shrink sleeves, and foils, catering to various industries from food to pharmaceuticals.

CHALLENGE

Despite its technological advancements and expanding market presence, Luuka Plastics faced significant operational challenges due to frequent power outages and voltage fluctuations. These issues caused costly production downtimes and operational inefficiencies. During the production of plastic bags, sudden power cuts halted machines such as roll laminators and flexographic printing presses, resulting in machinery damage and costly repairs. Additionally, this led to material wastage and the need for extra fabric to continue production, which drove up labor costs and caused further disruptions.

In the manufacturing of their plastic products, processes such as injection molding and compression molding generated substantial heat. Power interruptions during these operations caused molten plastic to adhere to machinery, like injection barrels and mold cavities, requiring extensive cleaning. This added significant labour hours and complexity to operations, further exacerbating costs and resource inefficiencies. Consequently, Luuka Plastics required a reliable power protection solution to ensure uninterrupted operations, maintain high production standards, and mitigate the risks associated with equipment failure.

SOLUTION

To address these challenges, Luuka Plastics invested in a comprehensive range of Riello UPS systems, recognized for their advanced technology and reliability. The installation included models such as the **UPS MPT 120 6P, UPS MHT 600, UPS MPT 160 6P, UPS MPT 200 6P, UPS MHT 300, and UPS MHT 500**, tailored to meet the specific power needs of Luuka Plastics' facilities. The deployment was meticulously planned in collaboration with Riello's technical team to ensure minimal disruption and enhanced power stability.

Technical Features of Riello UPS:

- Double Conversion Technology:** Ensures clean and stable power supply by converting incoming AC power to DC and back to AC, providing complete isolation from power disturbances.
- High Efficiency Ratings:** Riello UPS systems are designed for low energy consumption, which translates into reduced operational costs.
- Modular Design:** Facilitates scalability, allowing Luuka Plastics to expand its power protection as the business grows.

IMPLEMENTATION

Installation Details:

At the Kawempe plant, a diverse array of Riello UPS systems was installed, while the Namanve plant received a customized selection to ensure robust protection. Close coordination with Riello's team allowed for effective installation, overcoming challenges related to production schedules and space constraints.



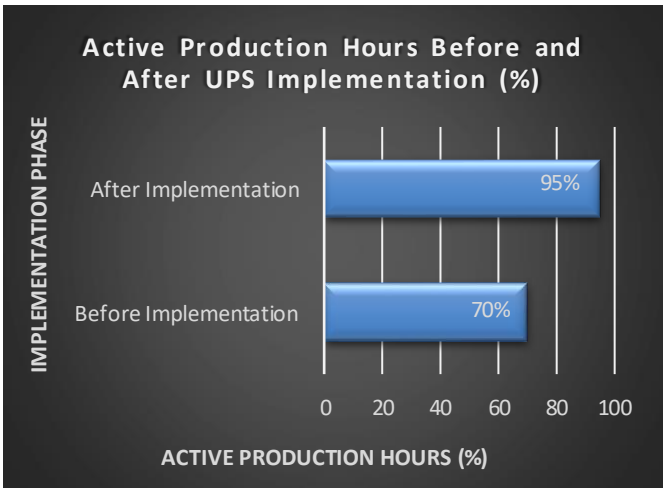
INTEGRATION

Riello UPS systems were seamlessly integrated into Luuka Plastics' existing electrical infrastructure, including power distribution units and electrical panels. They were also connected to supervisory control systems for real-time monitoring, ensuring comprehensive power protection alongside existing backup systems such as generators.

RESULTS: Luuka Plastics experienced a range of transformative benefits following the implementation of Riello UPS systems, leading to significant improvements across various operational areas:

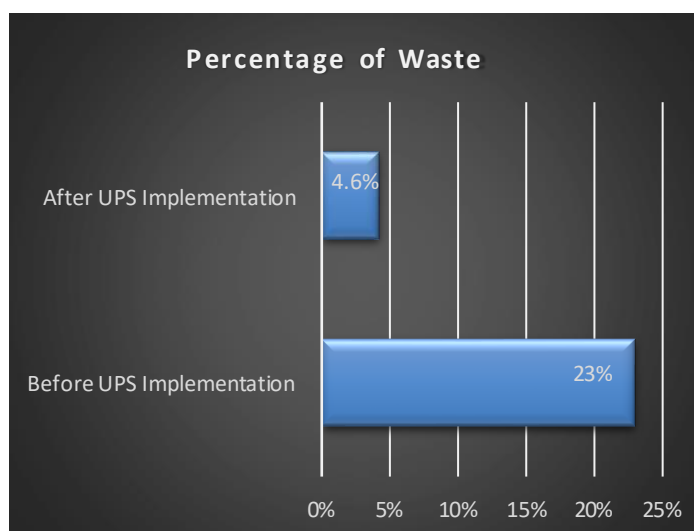
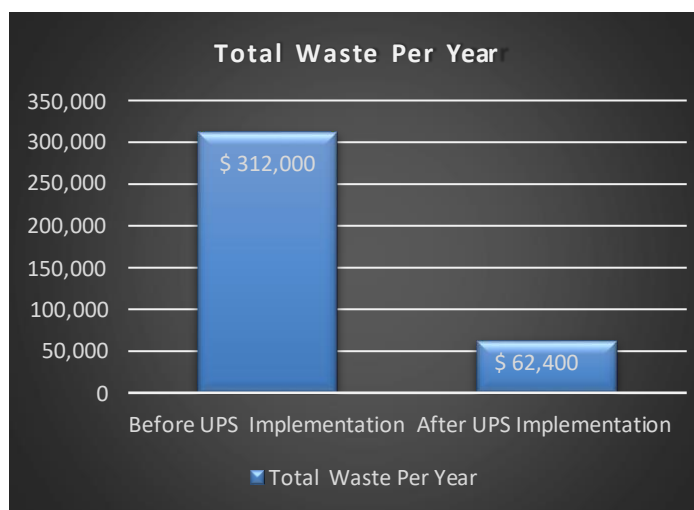
DOWNTIME REDUCTION

Increased Production Performance: Active production hours surged from 70% to 95%, resulting in a significant boost in overall output.



Improved Labour Utilization: Employees were able to focus on productive tasks rather than addressing equipment failures, enhancing overall workforce efficiency.

Reduction in Material Waste: With stable power, the wastage of fabric and other materials was minimized, reducing additional costs associated with reordering and excess inventory.



MACHINE FAILURE MITIGATION

Reduced Component Failures: The frequency of internal component failures in critical machinery such as servo motors, PLC units, and heaters declined significantly, resulting in lower repair costs and less downtime.

Increased Machinery Lifespan: Enhanced power protection improved the longevity of equipment like injection molding machines and extruders, delaying the need for costly upgrades.

Operational Consistency: Improved power quality from an Uninterruptible Power Supply (UPS) led to uniform production quality and reduced defect rates, enhancing overall reliability. Riello UPS provided a stable power supply, eliminating fluctuations that could harm machinery and minimizing failures. This consistency improved product quality and streamlined processes. Additionally, it protected against voltage spikes, preventing costly repairs. By ensuring reliable power, the UPS enabled continuous operations and effective responses to market demands, increasing efficiency and customer satisfaction.

SUSTAINABILITY IMPROVEMENTS

Lower Energy Consumption: The high efficiency of Riello UPS systems resulted in decreased energy usage, aligning with Luuka Plastics' commitment to eco-friendly practices.

Reduced Heat Emissions: By minimizing power interruptions during processes like injection moulding, the need for extensive machine cleaning was lessened, reducing labour hours and energy waste associated with cooling down overheated equipment.

Waste Reduction: By minimizing material wastage and damage from power-related issues, the company significantly supported its environmental initiatives, contributing to a smaller carbon footprint.

Additional Benefits

Boosted Employee Morale: A stable work environment with fewer interruptions improved employee morale and productivity, leading to a more engaged workforce.

Scalability for Future Growth: Reliable power systems provided a strong foundation for future expansion, allowing Luuka Plastics to scale operations confidently.

Increased Profit Margins: Operational efficiencies and cost savings translated into higher profit margins, enhancing the company's financial stability.

Enhanced Customer Satisfaction: With improved production reliability and consistent product quality, Luuka Plastics experienced a positive impact on customer satisfaction. Timely deliveries and high-quality products strengthened customer relationships.

SPACE MANAGEMENT

Optimized Inventory Levels: Reducing the extra stock kept for power disruptions resulted in lower storage costs and better management of resources.

Enhanced Layout Efficiency: Freed-up space allowed for better organization within the production area, improving workflow and operational safety.



Furthermore, Riello UPS offers robust service and maintenance support, including the replacement of fans, capacitors, firmware updates, technical training sessions, and resolution of any UPS-related issues for their clients. Riello UPS engineer also visited the Luuka Plastics plant, providing maintenance services for the UPS systems and training the technical staff to perform maintenance activities at both the Kawempe and Namanve plants. This ongoing support enhanced the reliability of the systems, ensuring continued operational excellence for Luuka Plastics.

Note:

Riello UPS collaborates with SACE (the Italian Export Credit Agency) to offer clients competitive untied medium- to long-term loans. This collaboration simplifies the procurement of Italian goods and services, enabling companies like Luuka Plastics to invest in essential technologies. With minimum interest rates, clients can leverage SACE financing to enhance operations and ensure reliable power supply, supporting their growth and sustainability initiatives.

CONCLUSION

The collaboration between Luuka Plastics and Riello UPS has been transformative, yielding impressive results that demonstrate the critical importance of reliable power protection in manufacturing. With active production hours increasing from 70% to an impressive 95%, Luuka Plastics significantly enhanced operational efficiency. This shift not only minimized downtime but also led to a remarkable 30% increase in sales and a 25% annual ROI, fully recouping the initial investment within just five years.

By reducing material wastage and optimizing labour utilization, the company improved its bottom line while simultaneously supporting sustainability initiatives. The implementation of Riello UPS systems has established a robust foundation for future growth, allowing Luuka Plastics to confidently meet increasing market demands and maintain its competitive edge.