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Power in Motion

Global Automotive Components Manufacturer Cuts Automation Losses By 50% with CaPow

The Tier 1 Manufacturer Case Study

Introduction

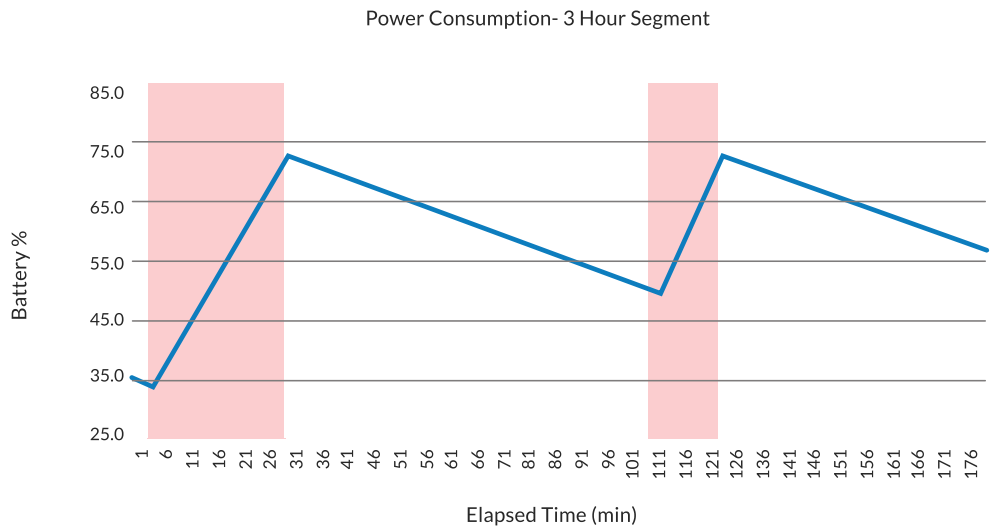
A Tier 1 automotive manufacturer, the world's second-largest automotive supplier, renowned for its advanced technology and global large-scale operations, faced a significant challenge: production losses attributed to automation, and specifically mobile robot inefficiencies mainly caused by charging downtime.
This led to inflated fleets, precious facility real-estate lost to charging equipment, and decreased productivity.

The Operation

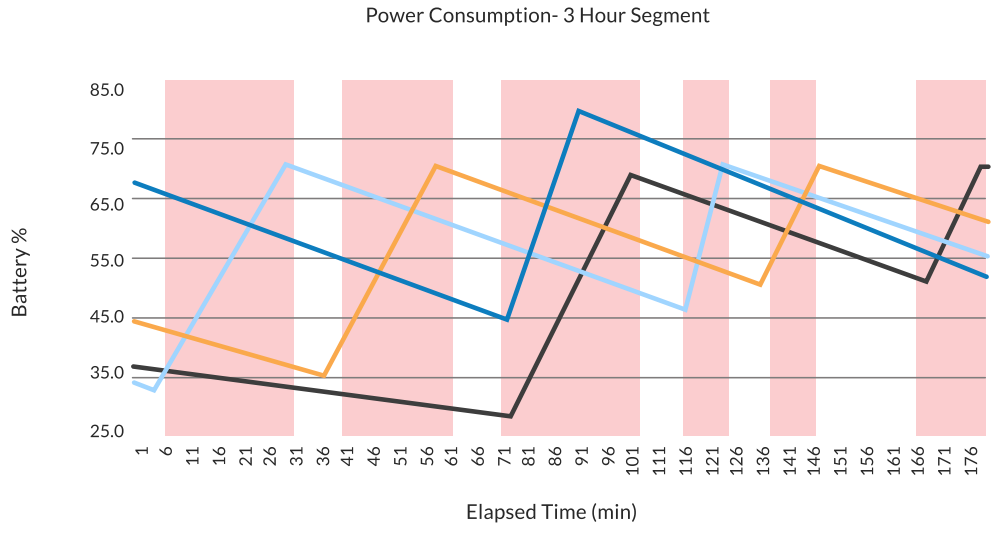
50-robot fleet divided into 5-6 robot clusters, transporting parts between the warehouse, the production line, and the storage and delivery functions.
After queueing up in lines next to stations for minimal periods of time and picking up parts carried on designated carts, the robots travel in long aisles to reach their drop-off destination.

The Challenge

The manufacturer's 50-robot fleet was suffering from long charging cycles due to poor work:charge ratio, as can be seen in the chart below. White areas indicate productivity periods, while red areas indicate production downtime due to charging:



One robot battery percentage



One cluster battery percentage

As can be seen from the above graph, fully efficient production in which all robots worked simultaneously amounted to a mere 30% of total production time.

Charging downtime amounted to:

20% Solution Downtime	Every 5th robot is out of circulation due to charging downtime
25% Fleet Inflation	Extra robots were needed to compensate for charging downtime
4% Productivity Loss	Production losses caused by automation amounted to 4% of overall losses

In addition, every floor charger took up 10 square feet of the facility's rare storage place, with another 10-15 square feet required to be free of equipment to allow safe robot approach to the charger.

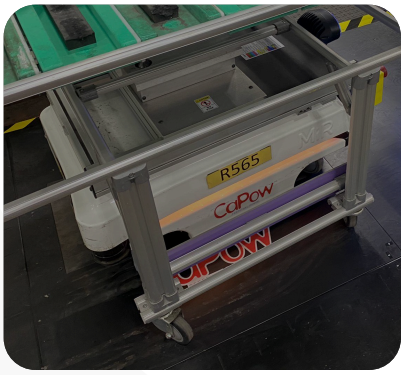
CaPow's Solution

The company turned to CaPow's Genesis platform, which offers in-motion energy transfer, charging robots while performing their operational routes. The solution allows both charging while the robot is moving, and also charging while the robot is stationary, but with vast misalignment rates.

CaPow performed a retrofit process in which robots were field upgraded with CaPow's add-on system, requiring no original layout changes.

Floor antennas were tailored to the manufacturer's request, with no specific mounting or excavation needed, and without any modifications to the fleet's operational routes.

Power-in-Motion



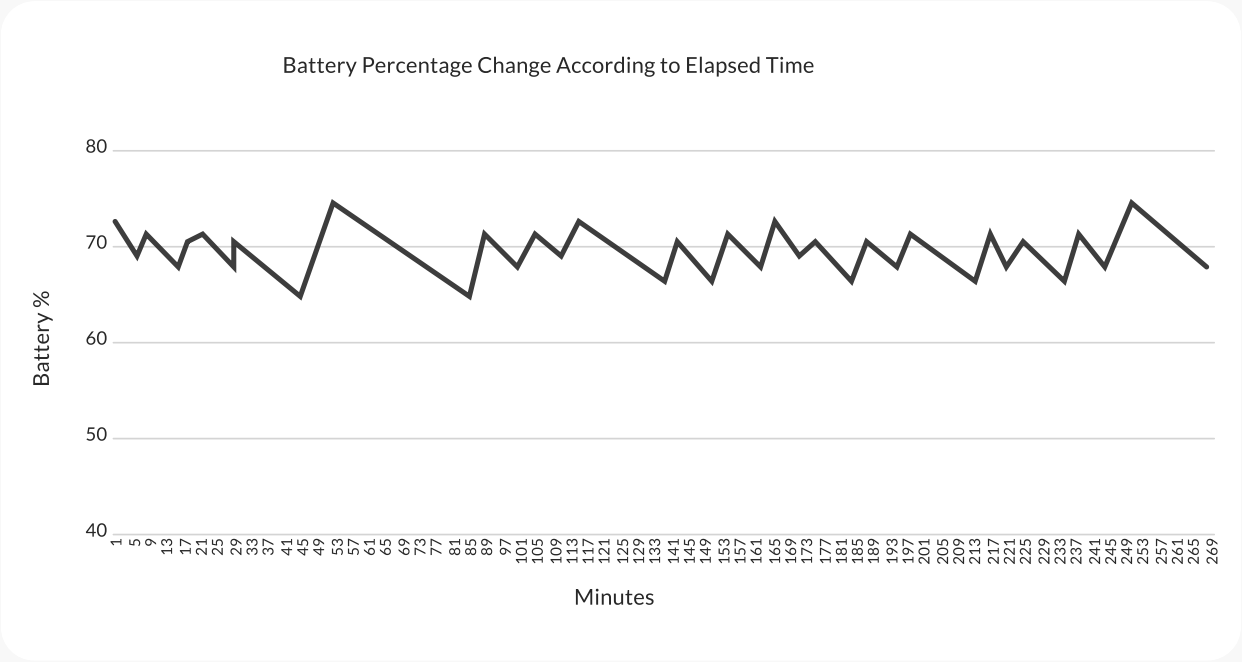
Power delivery
While en-route

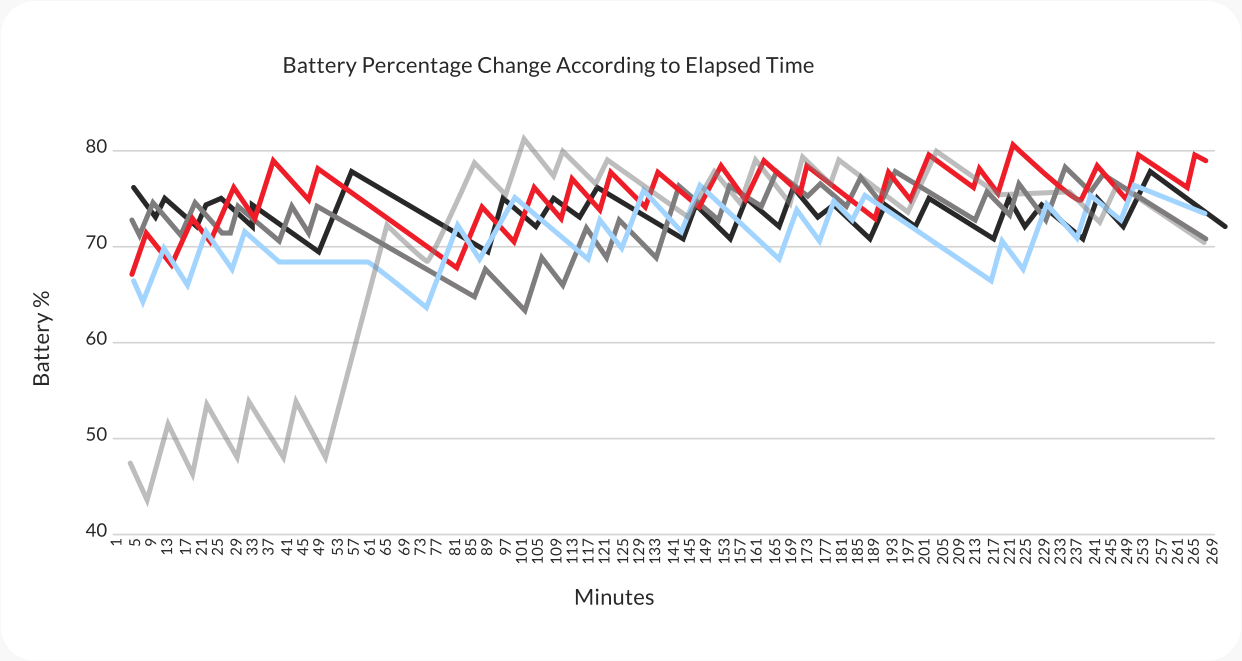
100% Uptime for
100% of the fleet

Headache-free
integration

The solution eliminated charging downtime and provided the operator with constant ***100% fleet efficiency,*** totaling a ***50% decrease in overall production losses*** caused by automation- estimated to ***save over $2M*** annually. once out-of-circulation robots were now added to the operational fleet and reallocated to other high-priority projects, further boosting productivity and ***increasing automation yield by 25%.***

All units' battery percentage is now "trickle charged" between 65% and 80%, while all retrofitted units achieve 100% uptime, as such:





Customer Testimonial

”The implementation of CaPow's Genesis solution has been extraordinary. It has not only tackled a critical industry-wide challenge at its core, but has exceeded our expectations in optimizing our robotic fleet's performance,”

”CaPow's dedication to pushing the boundaries in robotics has positively impacted our operational capabilities”

Head of Automation

The Results

The impact was immediate and transformative:

100% Uptime	Robots maintained constant battery levels while en route, eliminating downtime.
50% Fewer Losses	Significant and immediate reduction in automation-related losses.
Operational Efficiency	Reallocated additional units to other tasks, boosting productivity.
Cost Savings	The elimination of the need for extra robots, charging stations, and large batteries significantly reduced costs, while freed-up robots were reassigned to other critical projects.
Seamless Integration	The Genesis solution was integrated quickly and easily into the existing fleet, demonstrating CaPow's capability to support extreme scenarios and ensure high power delivery efficiency even for fast-moving, misaligned vehicles.

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Customer Testimonial

**”With CaPow’s solution, we not only eliminated downtime due to charging inefficiencies but also freed up extra robots from our fleet, which are now boosting productivity in other operations.
The impact has been transformative, cutting production losses related to automation by more than 50% and maximizing the efficiency of our 50-robot fleet.”**

Said operations Manager, Tier 1 Automotive Manufacturer

The Conclusion

This case study highlights how CaPow's Genesis solution revolutionized the manufacturer's operations, setting a new standard for industrial automation. By eliminating charging downtime, the manufacturer achieved significant cost savings, enhanced productivity, and maintained peak operational efficiency.

Immediate Production-Loss Reduction

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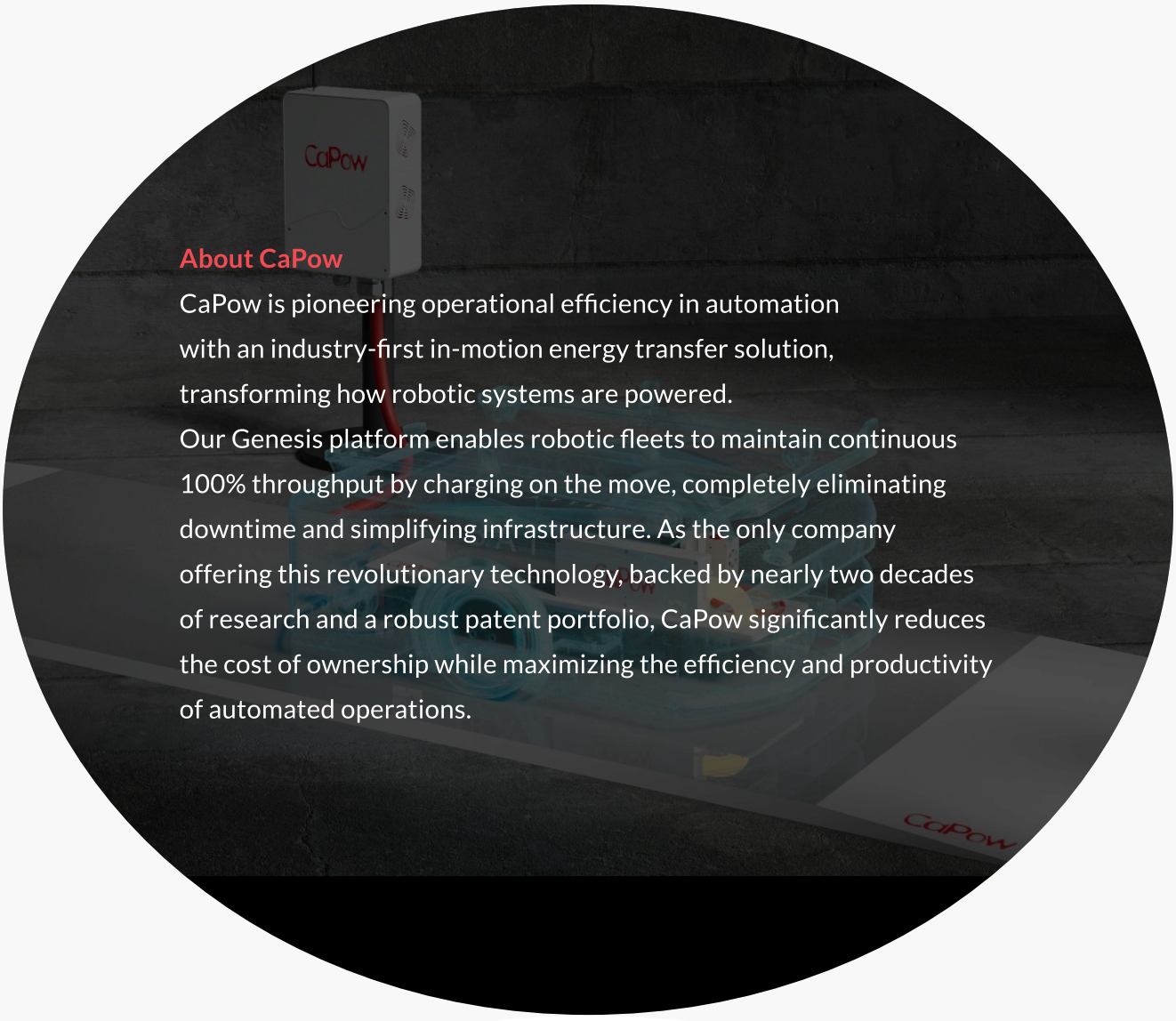
About the Manufacturer

This Tier 1 automotive supplier, based in Michigan, is one of the world's leading innovators in automotive technology. As the second-largest automotive parts manufacturer globally, the company is deeply committed to advancing vehicle safety, performance, and sustainability. Their Michigan operations are central to developing cutting-edge components and systems that shape the future of mobility. Known for its dedication to excellence, the company continually invests in new technologies to reduce environmental impact and enhance the driving experience, setting industry standards in the process.



About CaPow

CaPow is pioneering operational efficiency in automation with an industry-first in-motion energy transfer solution, transforming how robotic systems are powered.

Our Genesis platform enables robotic fleets to maintain continuous 100% throughput by charging on the move, completely eliminating downtime and simplifying infrastructure. As the only company offering this revolutionary technology, backed by nearly two decades of research and a robust patent portfolio, CaPow significantly reduces the cost of ownership while maximizing the efficiency and productivity of automated operations.