



MATERIAL
HANDLING

ELECTRIFYING MATERIAL HANDLING VEHICLES:

How Golden State Lumber and Papé Material Handling
Are Leading the Charge

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EXECUTIVE SUMMARY



The Future of Material Handling is Electric.

With over 50% of the forklift market now dominated by eco-friendly electric models, now is an optimal time for businesses to adopt cleaner, cost-efficient solutions. Driven by legislative pressures, environmental concerns, and growing demand, the electric material handling vehicles market is projected to grow 6% annually, reaching \$70 billion by 2029¹. Early innovations in smaller vehicle electrification now enable larger equipment to go electric, transforming the industry. Advancements like IoT-enabled smart forklifts and automation deliver low noise, zero emissions, reduced costs, and minimal maintenance, helping businesses stay competitive while prioritizing sustainability.

This white paper highlights how Golden State Lumber, a long-standing California-based company, successfully transitioned to an all-

electric fleet in partnership with Papé Material Handling. Golden State's experience illustrates how businesses can implement electrification in real-world environments and realize significant performance, cost, and sustainability benefits. Just as importantly, it shows how trusted relationships and strategic planning enable long-term success beyond a one-time equipment swap. It highlights real-world applications, measurable benefits, and emerging trends, making the case for companies to move away from outdated fossil fuels and embrace a cleaner, more cost-effective, and climate-friendly future.

“The electrification of forklifts shows no signs of slowing, with incentives being put in place to encourage even faster decarbonization of off-road vehicles”

– American Journal of Transportation

A FACILITY WITH UNIQUE REQUIREMENTS

Golden State Lumber has served professional builders and contractors in California since 1954.

Known for their indoor lumber yard model, Golden State focuses on keeping product protected and ensuring a streamlined, customer-friendly experience. But the design of their facilities introduced unique challenges.

“As far as the indoor lumber yard, if you look at other yards, typically it doesn’t look this nice. It keeps the product in great condition, but in the

confined space we’re in, we’ve had to spread up instead of spreading out,” explains Assistant Dispatcher Levi Culverhouse. This upward growth required precision equipment capable of operating in tight spaces with accuracy and consistency.

The physical constraints of an indoor lumber yard present special safety considerations as well. Narrow aisles, high racking, and constant pedestrian

traffic create the need for equipment that not only performs reliably but does so quietly and without harmful emissions. Electric MHVs fulfill this need with clean, silent operation that enhances visibility, improves communication, and contributes to a healthier environment overall.

Fuel costs and maintenance demands from internal combustion forklifts added further pressure. “With the amount of operations we do here, you can imagine we’d be flying through fuel, and it would be very expensive,” Culverhouse noted. Golden State needed a solution that would fit the physical and financial realities of its operation.



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THE SWITCH TO ELECTRIC WITH SUPPORT FROM PAPÉ MATERIAL HANDLING

Golden State's solution came through a trusted partnership with Papé Material Handling. The two companies have worked together for over 20 years, a relationship built on mutual success, responsive service, and shared growth.

"We've had a long relationship with Papé," says Fleet Manager Brandon Deering. "They've been our supplier of forklifts for the past 20 years. The service they provide, the information, and the technology is always improving. So having that partnership is just a way to be successful in our industry."

With guidance from Papé Material Handling, Golden State made a strategic shift to an all-electric fleet. This transition brought immediate benefits: fuel usage was eliminated, maintenance requirements dropped significantly, and employees enjoyed a safer, quieter working environment.

"We don't just want to cut costs—we want something that's going to work the best for us and be the most cost-effective. Electric forklifts have been that solution," explains Culverhouse.

Electrification wasn't a short-term decision but a deliberate move designed to future-proof operations. Through Papé Material Handling's support, Golden State ensured that the right battery technology and infrastructure were selected from the outset, supporting long-term scalability. Planning included estimating future energy demands, evaluating equipment duty cycles, and designing workflows around charging availability.

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OPERATIONAL BENEFITS OF ELECTRIFICATION

Electric MHVs are designed with efficiency in mind.

Their simplified design means fewer moving parts, which in turn reduces downtime and repair needs. According to the U.S. Bureau of Labor Statistics, electric vehicles can save between \$8,000 to \$12,000 in maintenance costs over their lifetime compared to their internal combustion counterparts². These benefits were visible immediately at Golden State Lumber.

“By switching to electric fleets, there are fewer moving parts, forklifts are up and running more, maintenance costs are down, it’s safer—you can hear what’s going on in the yard. You’re not smelling the diesel engines,” says Deering.

Electric forklifts also deliver consistent power, precise control, and quick acceleration, making them ideal for high-traffic operations in tight spaces. For Golden State, the ability to charge overnight and run throughout the day has proven invaluable.

“The ability to have one charge at night and have a forklift run all day long is going to save us a significant amount of money,” Deering explains.

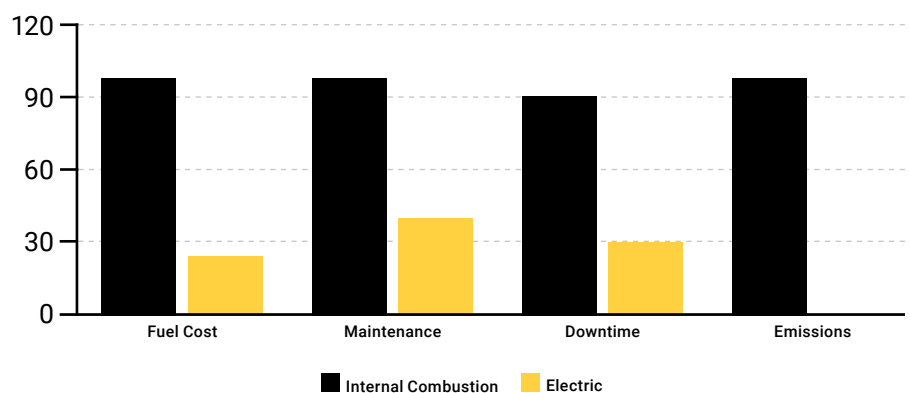
In addition to uptime, electric MHVs provide immediate torque, making them easier to handle on inclines or with heavy loads. This results in improved operational productivity, especially for facilities handling frequent lift-and-stack tasks. With advanced control systems and smooth

transitions, these vehicles minimize wear and stress on components.

Electric vehicles also offer the added benefit of reduced wear on braking systems through regenerative braking, which captures energy during deceleration and extends component lifespan. This contributes to a lower total cost of ownership while improving safety and performance in start-stop-heavy operations.

Efficiency in Action: Lower Costs, Longer Life

Electric forklifts reduce operational expenses with lower fuel, maintenance, and emissions costs—saving businesses thousands annually.



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PAPÉ MATERIAL HANDLING: MORE THAN A VENDOR

Papé Material Handling didn't just provide Golden State Lumber the equipment—they delivered a strategic roadmap for transition. Their experience across industries allowed them to tailor solutions that aligned with Golden State's operational and spatial constraints. This included recommendations on lithium-ion battery types, guidance on charger infrastructure, and maintenance support.

Golden State continues to rely on Papé Material Handling's fast, responsive service. Culverhouse explains: "From my experience, I know that if anything is wrong or even just maintenance checks when things aren't wrong, Papé's right out here. They have a location nearby. All it takes is a phone call, and they come out to service our lifts. That's integral to keeping this place working."

That level of trust and responsiveness has made all the difference. "The difference between Papé and other equipment providers is their attention to details, their service response times, and how their partnership with us keeps our fleet up and running," says Culverhouse.

Papé Material Handling maintains long-term relationships that support operational success at every stage. Their support spans employee training, regulatory guidance, incentive navigation, and long-term equipment planning. With dedicated

account managers and in-field technicians, Papé Material Handling helps clients not only adopt new technologies but integrate them seamlessly into everyday operations.

They also offer customized assessments, where operations teams walk facilities and interview operators to ensure that any transition plan will be both technically feasible and operationally intuitive. Papé Material Handling ensures teams are trained on how to optimize battery use, understand maintenance alerts, and properly deploy fast chargers.

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BATTERY TECHNOLOGY AND INFRASTRUCTURE PLANNING

Papé Material Handling offers two core lithium battery options tailored to operational needs. Lithium Classic is ideal for general warehouse operations, offering high energy efficiency and minimal upkeep. Lithium Frost serves facilities operating in refrigerated environments or where food safety is critical, performing at temperatures as low as -20°F³.

For Golden State, selecting the right charging infrastructure was key to optimizing uptime. Papé Material Handling helped determine capacity needs and charging times that matched their shift schedule. Opportunity charging, plugging in during short breaks, added flexibility without requiring expanded downtime.

Companies looking to follow suit should plan for scalability. As fleets grow or shift, charging infrastructure and power access must evolve in tandem. Papé Material Handling works with companies to develop future-ready systems that accommodate technological advancement and business expansion.

Selecting appropriate charger types, verifying amperage availability, and future-proofing infrastructure are all critical elements. Missteps in these areas can lead to bottlenecks and downtime. Papé Material Handling helps avoid these pitfalls through consultation, design, and installation services that align with long-term business goals.

Establishing an effective charging infrastructure for electric material handling equipment, such as forklifts and pallet jacks, requires careful consideration of charger types and strategic investments for scalability. Charger options include Level 1 and Level 2 Electric Vehicle Supply Equipment (EVSE). Level 1

chargers use standard electrical outlets and are suitable for extended parking sessions, though they offer slower charging speeds. Level 2 chargers provide faster charging rates, adding approximately 12 to 25 miles of range per hour, depending on the equipment, making them more appropriate for operations requiring quicker turnaround times⁴.

Papé Material Handling also provides cost modeling tools to compare various power configurations over time. For example, they help calculate whether a single-site or distributed charging setup will deliver the greatest ROI, factoring in usage patterns, shift overlap, and potential utility demand charges.



WORKFORCE SATISFACTION AND SAFETY IMPROVEMENTS



The benefits of electrification go beyond cost and productivity.

Electric MHVs promote safer, more pleasant work environments. Reduced engine noise allows for easier communication. The elimination of exhaust fumes means better air quality—particularly important in indoor facilities like Golden State’s.

Deering sums it up well: “When you’re at Golden State, you’re in and out and you’re breathing easy.”

Additionally, electric forklifts offer ergonomic advantages: smoother operation, reduced vibration, and intuitive control systems all contribute to operator comfort and long-term retention.

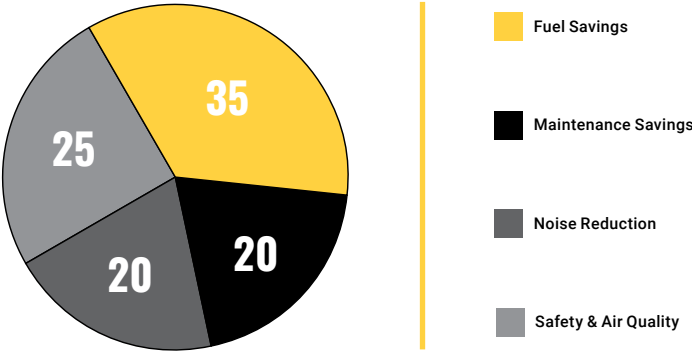
Electric MHVs also drastically reduce emissions. This improvement helps businesses meet ESG goals, comply with regulatory standards, and align with customer values.

Healthier air, quieter workspaces, and less physical fatigue contribute to greater employee morale. These

human factors are often overlooked in cost analyses but play a crucial role in workforce retention and operational resilience. Further, companies that modernize equipment and provide better work conditions are often better positioned to attract and retain skilled labor in a competitive market.

Golden State Lumber: Electrification Impact

Golden State Lumber’s all-electric fleet showcases how sustainability drives operational performance and workforce well-being.



WHY FLIP THE SWITCH: BENEFITS WITHOUT COMPROMISING PRODUCTIVITY

Beyond customer demand, the electrification of material handling vehicles (MHVs) is being driven by operational demands, environmental considerations, cost-effectiveness, and performance needs, making it a transformative choice for businesses today. The transition to electric vehicles represents the next wave of innovation and transformation across federal, state, and industry sectors.

Federal initiatives like the Global Memorandum of Understanding on Zero-Emission Vehicles and the Inflation Reduction Act⁵ set ambitious goals and provide funding for adoption, infrastructure, and manufacturing. States such as California and New York have implemented aggressive zero-emission sales targets, while industry leaders are launching electric vehicle lines, placing large orders, and building charging networks. Utilities are preparing the grid for increased demand, while communities affected by transportation emissions are advocating for cleaner air.

Electric MHVs feature a simplified design with fewer moving parts, eliminating complex systems like combustion engines, fuel injection, and exhaust components. This streamlined design reduces maintenance requirements, decreases downtime, and offers significant cost savings. According to the U.S. Bureau of Labor Statistics, electric vehicles save \$8,000 to \$12,000 in maintenance costs over their lifetime compared to internal combustion engine models⁶.

Electricity delivers significant lifecycle savings, with higher initial capital costs quickly offset by lower fuel and maintenance expenses, and offers performance that rivals or exceeds internal combustion forklifts while

boosting operational productivity. Currently, 61% of forklifts purchased nationally are electric, reflecting their cost-effectiveness, with electricity being 75% cheaper than propane fuel and contributing to significant operational benefits across the board⁷.

In terms of performance, electric MHVs offer rapid acceleration, smooth gear transitions, and consistent power, enabling them to rival or exceed internal combustion vehicles. These capabilities improve productivity while reducing wear over time, making electric MHVs a reliable and efficient choice for businesses.

Electric MHVs also enhance workplace safety and employee satisfaction through quiet, vibration-free, and emissions-free operation. This fosters a healthier, more comfortable work environment, free from the noise, fumes, and vibrations associated with diesel-powered equipment. Additionally, electricity's energy efficiency eliminates the need for on-site fuel storage, reducing hazards and increasing operational efficiency. Regenerative braking systems extend brake lifespan, further lowering maintenance costs.

As the industry advances its expertise in electric vehicle maintenance and adopts scalable electrification

solutions, transitioning to electric MHVs is essential for sustainable, efficient, and reliable material handling operations. This shift aligns with growing industry trends, environmental priorities, legislative mandates, and operational requirements, positioning electric MHVs as a cornerstone of modern logistics and supply chain strategies⁸.

Adopting electric vehicles demonstrates a company's commitment to reducing emissions and prioritizing environmental responsibility, making them trusted partners in a rapidly evolving industry. This transition not only aligns with the values of their customers and stakeholders but also strengthens customer relationships by providing more sustainable options to keep up in the rapidly evolving industry, on top of aligning with customer goals.

GROWING WITH PURPOSE

Golden State isn't just keeping up, they're setting the pace.

"We don't want to be a step behind, we want to be a step ahead. That's what makes us different from the competition," Culverhouse explains.

Day by day and year by year, Golden State is advancing in operational efficiency and environmental responsibility. Culverhouse has a strong vision for the company's future: "I just see Golden State growing. We're trying to serve our customers, make them successful so we're successful."

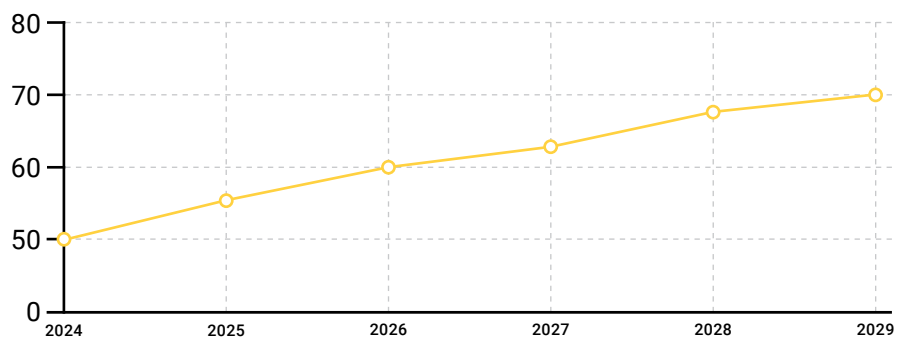
Their example shows how electrification can be more than a utility upgrade—it can serve as a differentiator and a foundation for sustainable growth. By staying ahead of regulatory mandates and

customer expectations, Golden State demonstrates how forward-thinking companies can lead by example.

With a quiet, cleaner yard and more uptime, they're able to create a better customer experience while future-proofing operations.

Electrification Market Growth Through 2029

The electric forklift market is projected to grow 6% annually, reaching a \$70B valuation by 2029 as adoption continues to rise.



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CHARTING YOUR ELECTRIFICATION FUTURE

Transitioning to electric material handling equipment (MHVs) requires a clear, strategic roadmap that aligns with your operational needs and long-term goals. Start by evaluating your current fleet and assessing how electric forklifts and pallet jacks could enhance productivity and efficiency. Consider factors like operational hours, charging schedules, and the types of loads handled daily. This initial assessment helps identify where electrification offers the greatest benefits and provides a foundation for informed decision-making.

Conducting a comprehensive cost-benefit analysis is essential to understand the long-term return on investment (ROI). While the initial purchase price of electric forklifts may be higher, they often incur lower operating and maintenance costs compared to internal combustion models. For instance, the Electric Power Research Institute provides a Forklift Cost Calculator to assist businesses in evaluating these factors⁹.



Additionally, various government incentives can offset the upfront costs of electrification. The Internal Revenue Service offers the Commercial Clean Vehicle Credit, providing tax credits of up to \$40,000 for qualifying electric vehicles and mobile machinery¹⁰ while the U.S. Department of Transportation outlines federal funding programs that support electric mobility infrastructure, which can help develop the necessary charging facilities for your fleet.

Partnering with experienced providers like Papé Material Handling can streamline your electrification

journey. Offering expert guidance at every step, from selecting the right equipment to accessing incentives like government programs and industry grants, as well as ensuring compliance with current regulations, ensures a smooth transition.

Planning for scalability is also crucial; as technologies advance, building flexibility into operations allows for the integration of emerging innovations, ensuring long-term success in an increasingly electrified market.

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CONCLUSION



The electrification of MHVs is a proven, scalable strategy that improves performance, reduces costs, and builds safer, healthier workplaces. Golden State Lumber's experience with Papé Material Handling shows how any business can make the leap with confidence and achieve real-world success.

From dramatic savings in maintenance and fuel costs to improvements in air quality, safety, and uptime, electrification isn't a futuristic idea, it's already driving competitive advantage for today's leaders in material handling. With the right partner and a clear strategy, companies can position themselves for long-term advantages in a competitive, fast-evolving marketplace.

Government programs and incentives further accelerate the transition to

electrification. Initiatives such as the Inflation Reduction Act and federal zero-emission vehicle funding provide substantial support for adoption, infrastructure development, and manufacturing. IRS tax credits designed to encourage clean energy adoption add another layer of financial benefit, making the shift to electric fleets even more compelling. Combined with reduced operating costs and improved workplace efficiency, these factors ensure that businesses not only achieve sustainability goals but also gain a competitive edge in the industry.

With the right tools and a partnership with Papé Material Handling, your operation can embrace electrification and thrive in the next generation of material handling solutions.

Explore what electrification can do for your operation.

Contact Papé Material Handling today.



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