



TOP FIVE QUESTIONS TO ASK BEFORE PURSUING INDOOR FORKLIFT ELECTRIFICATION



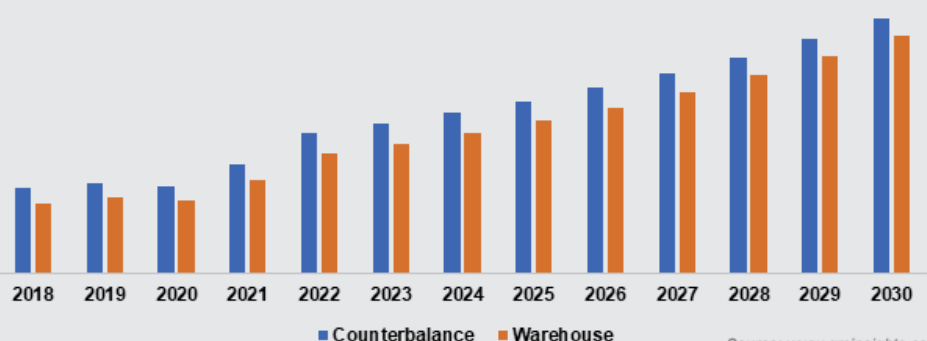
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Demanding industries like transport and manufacturing have long relied on internal combustion engine (ICE) forklifts, even in indoor settings. That's changing. Electric motive power is increasingly popular among high-intensity operations, and electric options for forklifts are no longer limited to lead-acid batteries. The opportunity is there, but what should you know about electrification for indoor forklift applications?

1 // ARE INDOOR OPERATIONS REALLY MAKING A SHIFT TO ELECTRIC?

The electric lift truck market was valued at USD \$50 billion (approximately 46 billion Euros) in 2021 and is expected to grow at a rate of 10% CAGR by 2030 to an estimated value of USD \$130 billion (around 121 billion Euros). Counterbalance lift trucks account for half the market. The electric warehouse truck segment is also forecasted to grow steadily by 2030. Subject matter experts expect this trend to accelerate in coming years as globally, there is a focus on reducing carbon emissions, such as those produced by diesel powered equipment.*

ELECTRIC LIFT TRUCK MARKET SIZE, BY PRODUCT, 2018 - 2030 (USD MILLION)



Source: www.gminsights.com



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2 // CAN ELECTRIC POWER OPTIONS REALLY OFFER COMPARABLE PERFORMANCE TO ICE?

The legacy electric motive power source, lead-acid batteries, possesses certain characteristics that hinder its ability to deliver performance on a par with ICE, especially for power-hungry indoor applications:

- Lead-acid batteries are generally too large and heavy to be adequately scaled up to satisfy the energy draw of a high-capacity lift truck.
- Power output diminishes as a lead-acid battery's charge depletes.
- Charging a lead-acid battery is space-intensive and time-consuming, requiring about 20 minutes for the operator to change the battery, followed by approximately 16 hours of charging and cool-down time.

By contrast, newer electric options like lithium-ion batteries provide consistent power until depletion, putting them more in line with ICE performance. Lithium-ion and thin plate pure lead (TPPL) batteries offer faster charging times than traditional lead-acid batteries and are designed for opportunity charging. And if you think electrification options might be insufficient or unproven for heavy-duty demands, think again. Hyster already offers electric power options for equipment with much higher capacities than most indoor forklifts, including those with load capacities up to 18 tonnes powered by integrated lithium-ion.





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3 // WHAT ARE THE BENEFITS OF SWITCHING FROM ICE TO ELECTRIC?

All electric options can help your company meet regulatory standards and reach emission reduction goals. Lithium-ion and TPPL produce zero harmful emissions, while lead acid does emit some gassing during charging. Deploying a truck fleet that doesn't emit smells or greenhouse gases can also help enhance working conditions for your operators, who benefit from improved air quality and reduced noise levels compared to ICE, especially in indoor settings. While all lift trucks require maintenance, the maintenance requirements associated with particular power sources vary. Electric drivetrains have fewer components and less complexity than ICE, and one particular electric power source, lithium-ion, requires zero battery maintenance or equalisation. The reduced maintenance requirements and workload associated with electric trucks can be an important aid for businesses.

4 // WHAT ARE THE CONCERNS?

Electrification can present advantages for many facilities, but every operation is different. Several factors influence appropriate motive power choice, including operating time, temperature, space availability, cost tolerance, local utility grid dependability, and relevant emissions requirements. For example, operations located in areas with weak electrical grids are more prone to experience brownouts that could temporarily grind work to a halt, particularly when charging lithium-ion powered equipment. Likewise, going electric may require your facility to dedicate extra space for battery storage or to upgrade its electrical and other infrastructure in order to support the necessary chargers or dispensers. Make sure you recognise the goals, needs, and limitations of your indoor operation before pursuing electrification.



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5 // COMPARED TO ICE, IS GOING ELECTRIC GOING TO BREAK THE BANK?

Electric power options range in cost from one type to another and will also vary depending on the particulars of your location and operation. Taking advantage of available grant and incentive programs can help offset the costs of electrification. Programs and opportunities will vary across Europe, the Middle East, and Africa, but resources are available to help make the conversion to electric more financially appealing. Rightsizing lithium-ion batteries and

chargers to your infrastructure and operational needs can also help contain costs, as overestimating the size of the battery and charging speed needed to accomplish your goals can lead to unnecessary overspending. Estimating and comparing not just the initial acquisition expense, but the total cost of operation over the life of the truck, including factors like energy spend, maintenance, space, and labour costs, can help you to arrive at the most cost-effective power solution for your unique operation.

For more information on electrifying your forklift fleet, talk to your local Hyster® dealer or visit the [power sources page](#).



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