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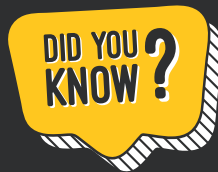
# FLEET ELECTRIFICATION IN MATERIAL HANDLING

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# INTRODUCTION

Modern consumers prioritize purchasing from brands that have a purpose and embrace sustainability. How do companies, like yours, ensure that they deliver a greener product/service? They can adopt eco-friendly materials to manufacture the product, use sustainable packaging, or even donate a portion of their profits to support eco-friendly initiatives.

Recent global trends in sustainability include creating a **climate-positive supply chain process**. Switching a business' material handling fleet from internal combustion (IC) engine forklifts to electric is one of the most economical and sustainable ways to achieve lower carbon emissions.



For every 10,000 hours of use, IC-powered forklifts emit 120,000 pounds more carbon emissions than electric forklifts.



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# IF YOU BELIEVE IN TRANSFORMING YOUR SUPPLY CHAIN BUSINESS TO DRIVE IT TOWARD SUSTAINABILITY AND PROFITABILITY, HERE ARE SOME STEPS YOU CAN TAKE:



## I. Replace internal combustion (IC) trucks with an electric fleet

### Lowered lifetime cost

Electric forklifts require less frequent servicing than their IC counterparts because they have fewer moving parts. This makes electric forklifts easier to maintain and repair and reduces the risk of an unexpected breakdown, translating to less downtime and increased productivity.

Based on decades of experience and customer data, we have summarized a real-life scenario of the lifetime cost of an IC-powered lift truck versus an electric forklift below:

For 5 years,	LPG forklift	Electric forklift
Vehicle cost (in CAD)	46,000	56,000
Maintenance cost (in CAD)	30,000	10,000
Energy cost (in CAD)	47,520	6,825
Productivity loss (in CAD)	17,500	3,400
Lifetime expense (in CAD)	141,020	76,225

Although the initial investment is higher in electric forklifts than in LPG ones, you can save ~46% of the lifetime cost by purchasing electric forklifts for your material handling fleet.

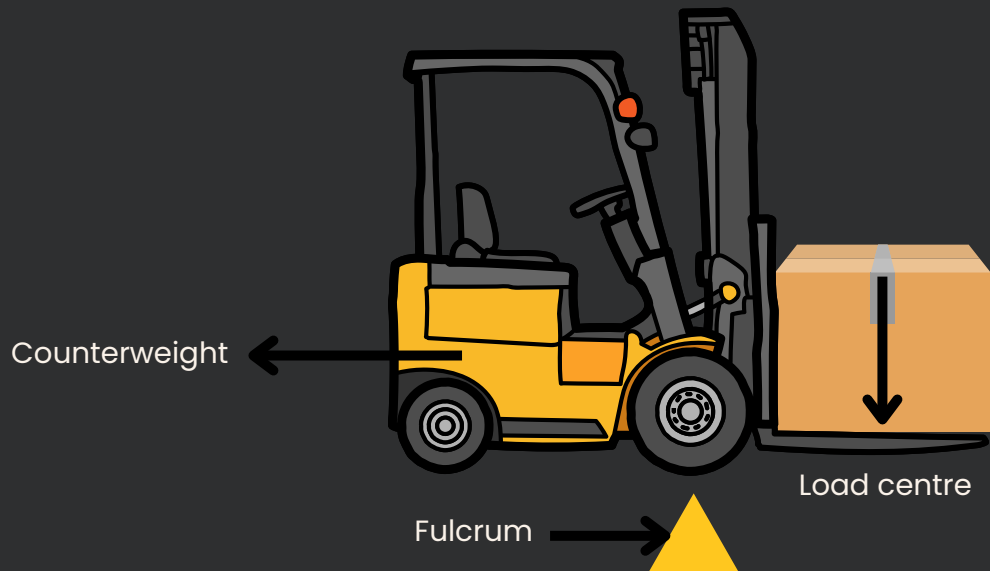
## Reduced carbon footprint

A significant drop in emissions, as well as service frequencies, are the factors that lead to decreased carbon footprint for electric fleets. This can help businesses like yours meet their sustainability goals while increasing productivity.

## Easier maneuverability

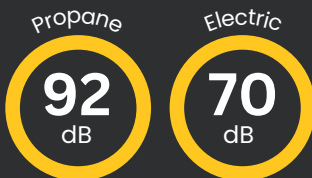
The working principle of a forklift is that of a cantilever; i.e., a load on the forks supported by the front wheels is counterbalanced by the weight of the forklift body and counterweight built into it.

In electric forklifts, batteries are used as a counterweight which makes the electric forklift design compact, providing a shorter turn radius to the forklift which contributes to greater maneuverability in narrow aisles.



## Increased employee safety

Operators' and employees' safety is a priority in warehouses and supply chain businesses. An upgrade to electric forklifts in warehouses means there is a substantially lower or no risk associated with noise pollution. An electric forklift produces 70 dB of noise, which is roughly equivalent to noise levels during a conversation. On the other hand, propane forklifts produce 92 dB of noise which can be compared to that of a jackhammer.



Electric lift truck operators also avoid inhaling fumes which does not occur while using IC-powered forklifts.

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## II. Choose electric forklifts with AC motor capabilities

- AC motors are more energy efficient than DC and are by large, maintenance-free
- Electric forklifts with AC technology will have less frequent service intervals than their DC counterparts

MIT FB16



"Mitsubishi and CAT AC electric forklifts have extended service intervals up to 500 hours with direct benefit to customers including the lower overall cost of ownership and increased uptime."

### **Mark Fratelli**

Field Service Supervisor  
Toromont Material Handling

## III. Embrace modern charging solutions (Multi-shift applications only)

- Reduce the number of batteries needed in multi-shift applications by using opportunity and fast chargers
- Charge batteries during breaks, lunches, and between shifts
- Save floor space by eliminating battery rooms

## IV. Adopt electric forklifts with advanced 5th-generation AC capabilities

- Leverage Jungheinrich and CAT forklifts that feature 5<sup>th</sup> generation 3-phase AC technology that maximizes lift truck energy efficiency
- Take advantage of lower maintenance components that extend service intervals to 1000 hours in most models which have this technology
- Eliminate spare batteries and reduce charging demands by using the 2 Shift on 1 Charge Guarantee

CAT 2EP5000



"Based on our test data and customer demonstrations, a CAT electric lift truck with 5<sup>th</sup> generation 3-phase AC technology shows 26% higher lifting performance and 10% lower energy consumption compared to other AC electric forklift brands in the market."

### **Hariprasad Manavalan**

Business Manager, Emerging Markets  
Toromont Material Handling

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## V. Go for advanced lead-acid battery and charging systems

- Leverage Hoppecke's advanced lead-acid batteries and chargers that have overcome the obstacles around getting energy back into the battery in a timely manner, without a negative impact
- Their systems use less time, less energy, and less water while extending the battery lifespan in the most challenging applications



"Our Jungheinrich outdoor pneumatic electric trucks are designed for heavy-duty applications in dusty, dirty, humid environments as well as for outdoor use. Critical components are sealed with SAAB connectors and high ingress protection to protect against all elements."

### **Sajith Manikath**

Vice President

Toromont Material Handling

JUNGEHEINRICH  
EFG 535K



Businesses realize the tremendous benefits that electrification in material handling brings. From increasing throughput and reducing costs, to creating a greener world, an electric material handling fleet can do it all.

If you wish to book a consultation to understand which combination of electric forklifts best fits your business, please contact us at [TMHMarketing@toromont.com](mailto:TMHMarketing@toromont.com) or 1-800-563-5438.

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