

Supply Chain Operations Shift Gears with Electric Forklifts and Other Powered Industrial Trucks



New survey finds 93% of supply chain operations view reducing emissions as an important goal for their companies, though only 17% have fully electrified their PIT fleets.



INTRODUCTION

Governments, business partners, investors and end customers are all demanding that businesses pay closer attention to how their operations impact the environment. The pressure is on for supply chains in particular, since an organization's supply chain often accounts for more than 90% of greenhouse gas (GHG) emissions.

One area that's particularly ripe for making progress against sustainability goals is the electrification of powered industrial trucks (PIT) – a category that includes common equipment like forklifts and container handlers. That's because the number of suitable electric options for material handling equipment continues to grow for intensive operations such as manufacturing, lumber, agriculture, steel and ports. In fact, the rumble of combustion engines and smell of exhaust in materials handling applications are both steadily giving way to a quieter, cleaner revolution.

To get the real story on equipment and technology that organizations use to run their busy operations, it usually helps to go straight to the source. To provide greater insight and quantify trends in supply chain sustainability and how companies are approaching the shift to electric PIT fleets, Peerless Media Research and Hyster Company conducted an online survey among readers of Logistics Management and Modern Materials Handling. The survey included input from more than 130 respondents who are involved in transportation, storage and distribution, inventory or logistics for one or more facilities.



SURVEY RESPONDENTS AT A GLANCE

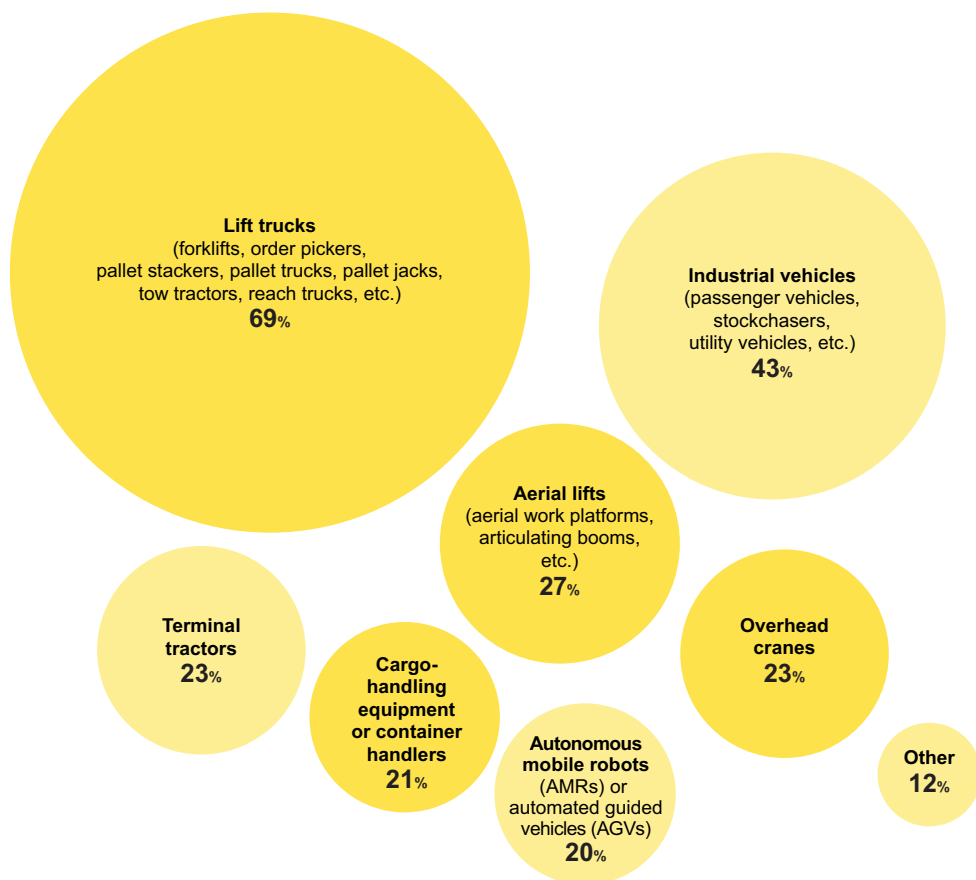
Breaking down the survey respondents by job title, 27% of them are managers, vice presidents or presidents of logistics, supply chain or distribution, while 25% are managers or supervisors of a facility or operations, and 14% are C-level corporate executives.

Survey participants work in a variety of industries, including food and beverage (15%), general manufacturing (14%), government (13%), third-party logistics (9%) and building materials (6%). Thirty-six percent say their company’s estimated total revenue for 2023 is under \$50 million, while 14% say \$2.5 billion or more, 9% say \$50 million to \$99.9 million, and 9% work for organizations with somewhere between \$250 million to \$499.999 million in annual revenues.

When it comes to mobile equipment usage, 69% of respondents are using lift trucks in their operations, 43% use industrial vehicles and 27% use aerial lifts. Additionally, 23% use terminal tractors in their operation, 23% use overhead cranes, 21% use cargo-handling equipment or container handlers, and 20% use autonomous mobile robots (AMRs) or automated guided vehicles (AGVs).

FIGURE 1

What type of mobile equipment do you use in your operation?

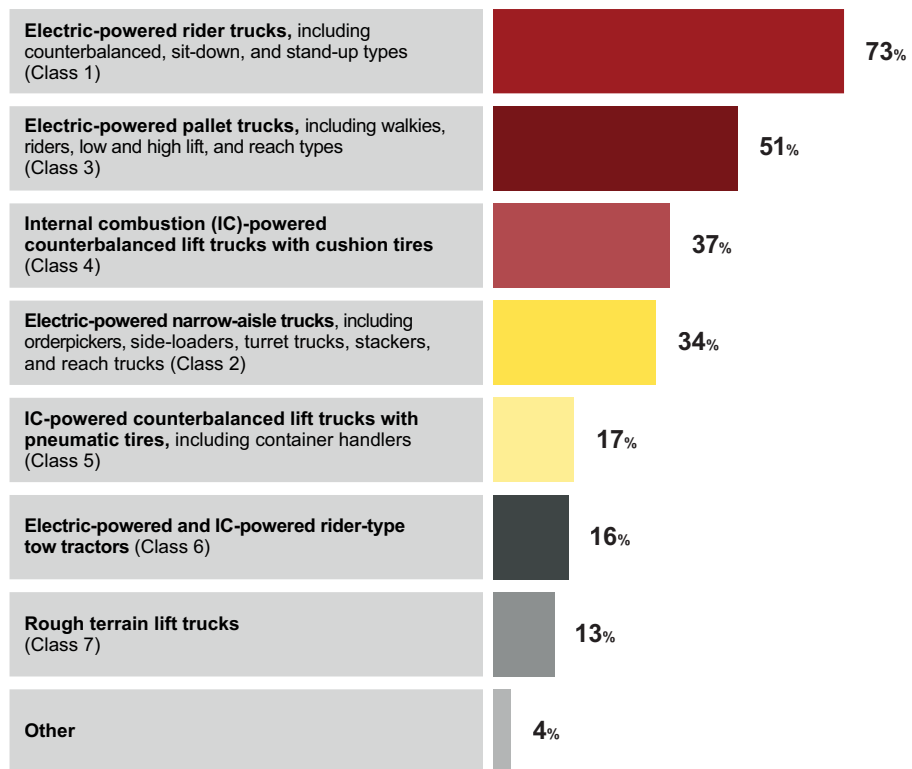


Looking at the acquisition of forklifts or container handlers specifically, almost half (47%) of respondents say they suggest or determine the need for these purchases. Forty-six percent evaluate suppliers, 37% recommend suppliers and 32% say they select the brand or supplier. Additionally, 28% of those surveyed authorize or approve these purchases, and 20% are involved in other ways. Their typical PIT fleet averages 24 trucks.

Electric-powered rider trucks, including counterbalanced, sit down, and stand-up types (class 1), are the most popular type of lift trucks in their facilities, used by 73% of respondents. More than half (51%) of the survey respondents are using electric-powered pallet trucks (class 3) and 34% use electric-powered narrow-aisle trucks (class 2). However, a substantial share depends on equipment powered by internal combustion engines (ICE). 37% use ICE-powered counterbalanced lift trucks with cushion tires (class 4) and 17% use IC-powered counterbalanced lift trucks with pneumatic tires, including container handlers (class 5).

FIGURE 2

What type(s) of lift trucks are in use at your facility?

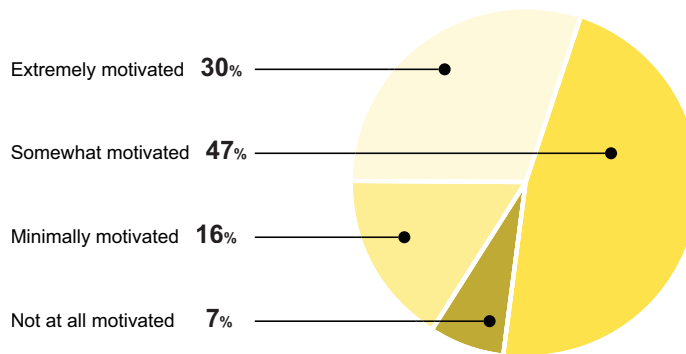


SUSTAINABILITY REIGNS

Nearly all survey respondents are motivated by sustainability to some degree. 77% say they're either "extremely" or "somewhat" motivated by the need to operate more sustainably, while just 7% are not at all motivated. Respondents say they're motivated by sustainability for different reasons, including its impact on future generations, the efficiencies that it creates and that it's just plain good for business.

FIGURE 3

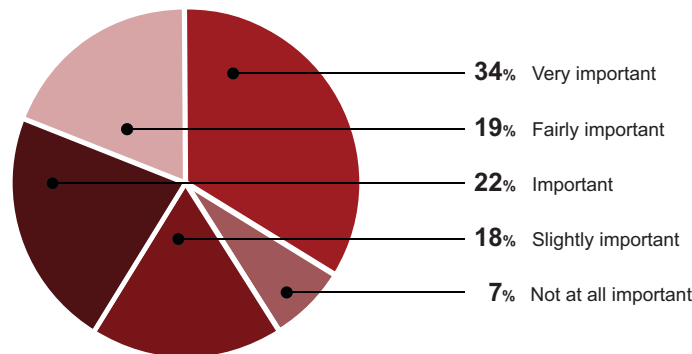
Are you personally motivated by sustainability efforts?



Nearly all (93%) survey respondents also say reducing GHGs is an important goal for their companies. Breaking that number down by degrees of importance, 34% of companies say it's extremely important to their organizations, 22% say it's important, 19% say it's fairly important and 18% say it's slightly important. Just 7% of survey respondents say reducing GHG emissions is not at all important.

FIGURE 4

How important is it to your company to reduce greenhouse gas emissions?

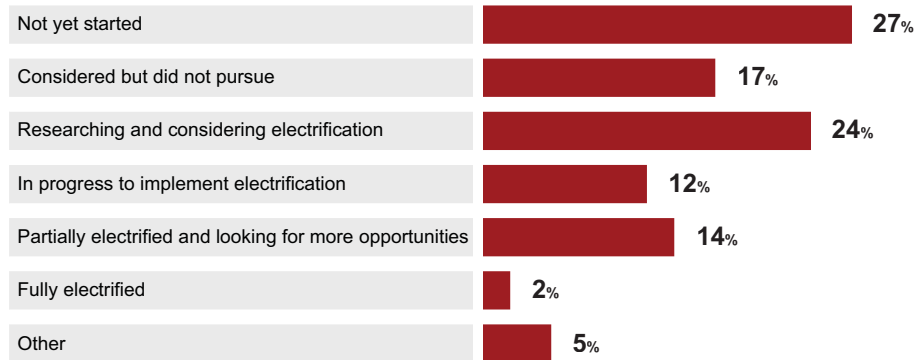


ELECTRIFICATION IS UNDERUTILIZED IN MAKING SUSTAINABILITY GAINS

Despite this nearly universal view among respondents that reducing emissions is an important goal for their companies, when asked about the progress of their electrification journey, only 2% of respondents say their operations are fully electrified. Twenty-seven percent have not started at all. Fourteen percent are partially electrified and seeking out more opportunities, 12% are in the process of electrifying and 24% are “researching and considering electrification.” Only 17% say they considered electrification but decided not to pursue it.

FIGURE 5

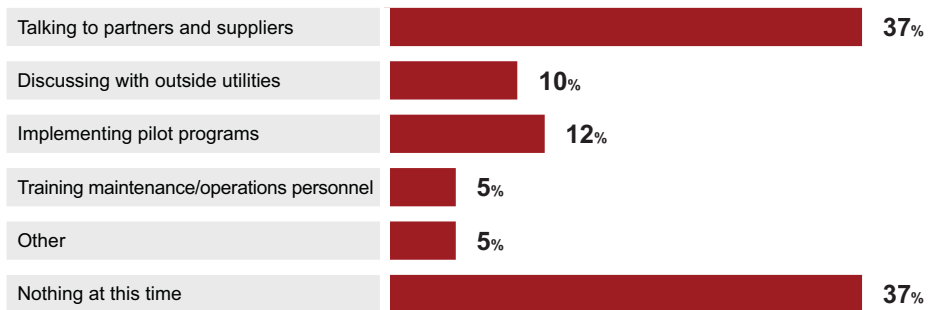
Where are you in your electrification journey?



To prepare their facilities for electrification, 37% of logistics professionals are talking to their business partners and suppliers about it; 12% are implementing pilot programs, 10% are discussing it with outside utilities, and 5% are training maintenance and/or operations personnel. Meanwhile, 37% of respondents say their companies have yet to make any moves to prepare.

FIGURE 6

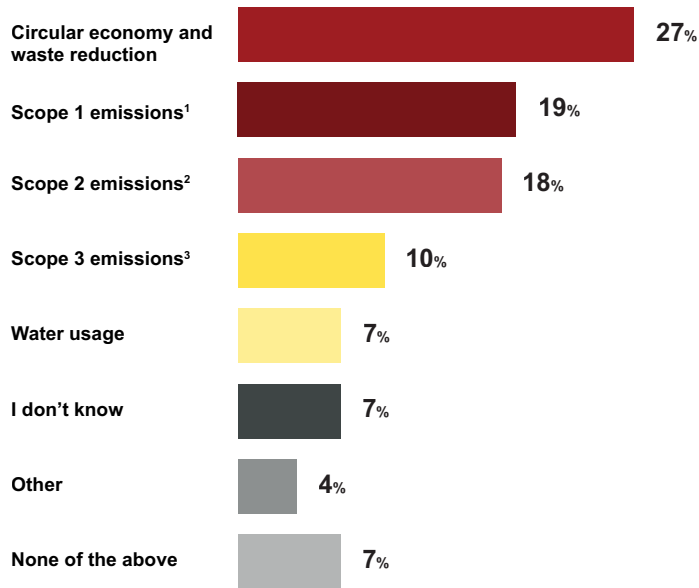
What are you doing now to prepare for electrification?



The dichotomy between the desire to reduce emissions and the extent to which operations have made the shift to zero-emission electric equipment is underscored by their current environmental, social and governance (ESG) agendas. According to the survey, the share of companies (19%) whose biggest focus is scope 1 emissions (the direct emissions owned or controlled by the company itself, including tailpipe emissions from equipment) is second only to the share of companies (27%) focused on the circular economy and waste reduction. Eighteen percent are working to reduce scope 2 emissions (the indirect emissions from purchased energy production), and 10% say scope 3 emissions are a major concern (the indirect emissions produced by suppliers). Seven percent of respondents say their biggest ESG focus right now is on reducing water usage. Seven percent of respondents say their biggest ESG focus right now is on reducing water usage.

FIGURE 7

What sustainability-related item is your company most focused on?



¹Direct, controlled by your company, such as tailpipe emissions from mobile equipment

²Indirect, caused by the generation of electricity used in your company's buildings, such as HVAC and charging equipment

³Indirect, consequences of your company's activities, such as buying, using and disposing of products from suppliers

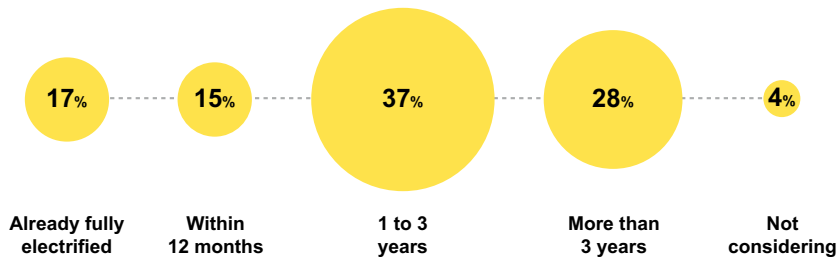


IMPLEMENTING INDUSTRIAL ELECTRIFICATION THROUGH MATERIALS HANDLING

Although nearly all (93%) companies identify with the need to address GHG emissions, only 17% have fully electrified their powered industrial trucks fleets, 28% of respondents don't expect to start buying and leasing electric PITs for at least another three years. Fifteen percent plan to make their move within 12 months, while 37% say it will happen within the next one to three years.

FIGURE 8

What is your planned timeline to purchase or lease electric powered industrial trucks?



It is clear that electrification remains somewhat of an “unknown” for companies, and particularly for those who are just starting on their electrification journeys. According to the survey, 37% of companies cite cost as the biggest unknown followed by facility infrastructure (32%), government regulations (12%) and local utilities (11%).

FIGURE 9

What's your biggest unknown, as it relates to electrification?



* charging/refueling stations, fuel storage

Some of this uncertainty may stem from the complexity associated with electrifying whole industries. The term “industrial electrification” signifies a comprehensive shift in power generation across industries, processes, activities and equipment, oftentimes with an emphasis on heat generation. Electrifying an entire sector is broad, complex and beyond the reach of any single company. The agenda is currently being set at the governmental, policy-making level. But PIT electrification is a step toward industrial electrification that operations can act on today. This can be seen in the responses when asked what “industrial electrification,” refers to. Most respondents say for them it applies to PITs like lift trucks or forklifts (66%) and fixed material handling equipment such as assembly lines or conveyors (45%). A smaller share associated the term with the types of equipment that industrial electrification is most focused on: 41% said it applies to industrial process equipment such as pumps or presses and 37% said power generation (i.e., furnaces or wind turbines).

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UNDERSTANDING PIT ELECTRIFICATION DRIVERS

The survey results indicate a lot of opportunity for continued education in this space. According to the survey, 66% of respondents only somewhat understand their forklift electrification options, while 9% report having no understanding at all.

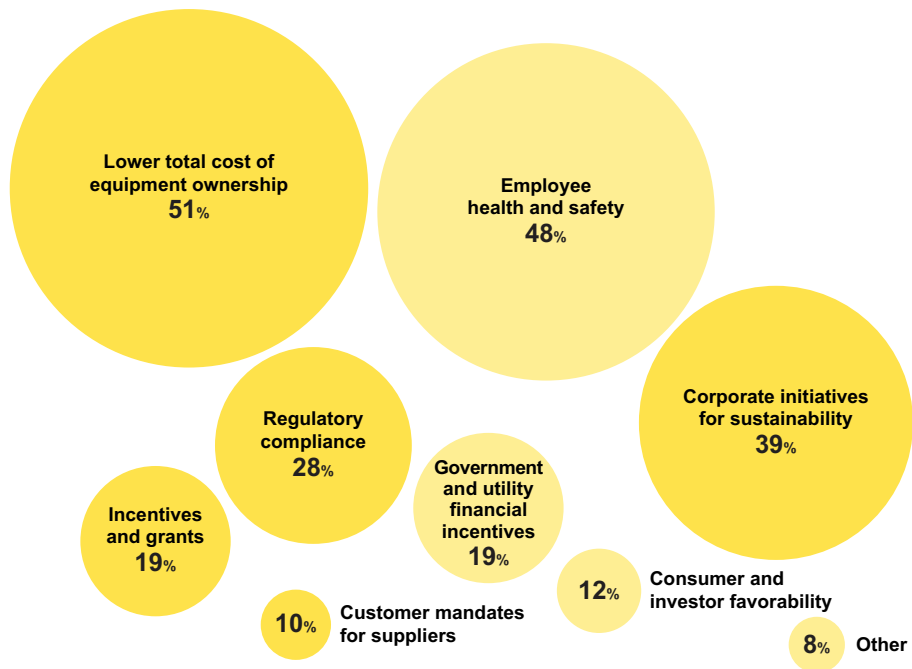
When they hear the term “forklift electrification,” most survey respondents associate it with lithium-ion power sources (69%), lead acid power sources (39%) and hydrogen fuel cells (30%). Other power sources that people associate with forklift electrification are thin plate pure lead (25%) and hybrid fuel (24%).



Companies that have or are considering electrifying their industrial truck fleets have different reasons for doing so. More than half (51%) make the move due to a lower total cost of equipment ownership. Others cite employee health and safety (48%), while 39% say corporate initiatives for sustainability drove the change. Additional reasons for pursuing electric include regulatory compliance (28%), government and utility financial incentives (19%), incentives and grants (19%), consumer and investor favorability (12%) and customer mandates (10%).

FIGURE 9

What are the top 3 reasons you're considering or have considered electrifying your powered industrial truck fleet?



The biggest concern for these companies when it comes to electrifying their powered industrial truck fleet is a higher equipment acquisition price. This concern exhibits a different type of cost-consciousness compared to companies that actually have or are electrifying, which cite lower total cost of equipment ownership as their top motivation. Facility infrastructure requirements and utility grid constraints were other top barriers to electrifying fleets.



SHIFTING GEARS WITH ELECTRIC INDUSTRIAL TRUCKS

When electrifying, 40% say they go about it by gradually replacing ICE trucks with electric as needed, while 25% start or plan to start with pilot programs and 15% say they prefer to fully convert their fleet.

CONCLUSION

As the survey proves, companies are paying close attention to sustainability. Many are taking measures to reduce the carbon footprint of their supply chain, though significant opportunities remain, including PIT electrification. As businesses look to tackle today's tasks without losing sight of tomorrow's impact, Hyster can help through advanced, energy-efficient electrification technologies for forklifts and container handling equipment. The company is focused on equipping intensive operations with the performance and efficiency they require, while serving as a trusted materials handling electrification resource.

For information on how to electrify your powered industrial truck fleet, visit [Hyster.com](https://www.hyster.com).

