

APPLICATIONS & TECHNOLOGY TRENDS IN LIFT TRUCKS

THE LITHIUM POWER SURGE



Lithium Batteries: Replacing Lead-Acid

- Meeting the increased duty cycle needs of the modern warehouse.
- Gaining market share due to reduced Total Cost of Ownership (TCO).

KEY BENEFITS

- 1 Lower cost
- 2 Increased energy capacity
- 3 Faster charge times
- 4 Enhanced operator safety

ECONOMIC & BUSINESS DRIVERS



On-Board Charging: Drive & Charge Anywhere

Addresses loss of off-board chargers in rental fleets. Less maintenance, boosts efficiency, and simplifies rental fleet deployment.



AMRs & AGVs: Productivity & Labor Solutions

Demand for increased productivity and scarce labor drives deployment of Autonomous Mobile Robots (AMR) and Automated Guided Vehicles (AGV).



Business Model Shift: The Move to Leasing & Renting

Businesses prefer flexibility and reduced financial burden of renting/leasing over long-term ownership.



THE 24/7 WAREHOUSE

Increased Productivity in Every Area

- Online shopping and rising space costs demand higher productivity.
- 24-Hour Cycle: Machinery now operates beyond the traditional 8-hour shift.
- Requires increased automation and advanced technological integration for efficient operation and maintenance.

REGULATORY & SUSTAINABILITY STANDARDS



Zero-Emission Mandates

- Regulations enforce energy efficiency and zero-emission standards
- e.g. CARB's Zero Emission Forklift Regulation (07/24) requires phasing out spark ignition engines (propane, gasoline) to reduce pollutants/GHGs.



Sustainable Solution Demand

- End-users prioritize ESG factors
- Businesses adopt advanced technology to minimize environmental impact, reduce waste, and extend equipment life.

CHOOSING THE RIGHT SOLUTION SUPPLIER



Choose a reliable supplier that understands your whole system, not just the components, and has a complete charging range. Delta-Q and ZIVAN, under ZAPI GROUP's charging solutions, offer on-board and off-board charging solutions ranging from 350 W to 88 kW, and can supply solutions to fit your lift truck design. Visit zapigroup.com/en/charging-solutions for more information.