Making Electrification Work: A Yard Truck Case Study

Transportation & Innovation Expo
The terminal truck is known by many names including:

- Hostler
- Spotter
- Shifter
- Yard dog
- Buggy
- Jockey
- Tractor
- UTR
- Stevedoring tractor
- Yard truck
- Goat
- Mule
- Shunter
- Tug
- Shag
- Switcher
- Trailer mover
- and more...
Why Electric with Orange EV?

Below are examples of Orange EV fleets, just a few of those stating on-record that Orange EV trucks are higher quality and more reliably doing the job in place of the diesel trucks they replaced. These include global leaders as well as smaller, regional, and government fleets.

Of the McDonald’s NALC
Deployed Industry Segments

- Rail Intermodal
  - In use with top ramp operators and railroads
- Seaport
  - Supporting California Ports of LA, Long Beach and Oakland
- Parcel
  - The sorting operations of global brand leaders
- Global Retail Distribution
  - The big boxes
- LTL Freight
  - The largest, busiest break-bulk sites
- 3PL firms
  - Global leaders and regional firms alike
- Manufacturing
  - Global and regional consumer brand leaders and commercial brands
- Spotting
  - Innovative firms electrifying and optimizing yard management
- Waste Mgt
  - Municipal waste transfer sites
- Warehouse/DCs
  - McDonald’s distribution network (NALC) as well as national and regional logistics firms

**ORANGE EV TRUCKS: OWNED AND OPERATED ACROSS SITES AND FLEET TYPES**
Built to Site Specifications

Single axle (4x2) with GCWR of 81k LB up to 25 MPH. Major configurations include:

Truck:
• New
• Remanufactured

Battery:
• Standard 80 kWh
• Extended 160 kWh

Charging:
• Standard 15-22 kW per hour
• Fast 80 kW per hour

DOT:
• Off-road
• On-road (DOT compliant)
With much less to maintain and repair

Eliminated: Engine, transmission, diesel fueling, emission control

Replaced by: Mostly sealed, maintenance-free components. Single battery pack and brushless induction motors.

Operation: Much like before
Charging Solutions to Meet the Duty Cycle

Easier than fleets think. “Standard” charging is most common. Can fully charge in under two hours via fast charging. “Top up” by opportunity charging, plugging in during existing downtime (breaks, lunch, shift changes, waiting for moves, etc.).

Images show the Extended Duty Truck using Standard Offboard Charging. Cabinet can be installed inside or outside.

Standard Charging
- Offboard, standard charging cabinet
- 440-480 VAC, Up to 22 kW charging capacity

Fast Charging
- Offboard, fast charging cabinet
- 440-480 VAC, Up to 80 kW charging capacity

No battery swap or maintenance — Just plug in the trucks
**Save Money**

Going electric wins the support of local communities and green customers while reducing costs.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Power Train</th>
<th>Brakes</th>
<th>Emission Control</th>
<th>Health &amp; Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel</td>
<td>Save 100%</td>
<td>Save 95%</td>
<td>Save 100%</td>
<td>Save even more on a broad range of other costs incurred when using diesel including:</td>
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<tr>
<td>Electric</td>
<td>Save up to 90%</td>
<td>No engine and no transmission</td>
<td>Regenerative braking recharges battery</td>
<td>Liability/work comp</td>
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<tr>
<td></td>
<td>Electricity is the most efficient vehicle fuel</td>
<td>Electric</td>
<td>N/A</td>
<td>Health care</td>
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<td></td>
<td></td>
<td>Electric</td>
<td>Electric</td>
<td>Absenteeism and retention</td>
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<td>Electric</td>
<td>Fuel management</td>
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<td>Safety (alertness / shorter stopping distance)</td>
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<td>Emissions compliance</td>
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</tbody>
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Orange EV trucks are smoother, cooler, quieter, and cleaner.
PROVEN AND PREFERRED

FLEETS CHOOSE ORANGE EV

FLEET AND MAINTENANCE MANAGERS, SUSTAINABILITY TEAMS, AND COST-MINDED EXECUTIVES CHOOSE ORANGE EV’S PURE ELECTRIC TERMINAL TRUCK SOLUTION TO REDUCE COSTS, IMPROVE PERFORMANCE AND SAFETY, WHILE ELIMINATING EMISSIONS.

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