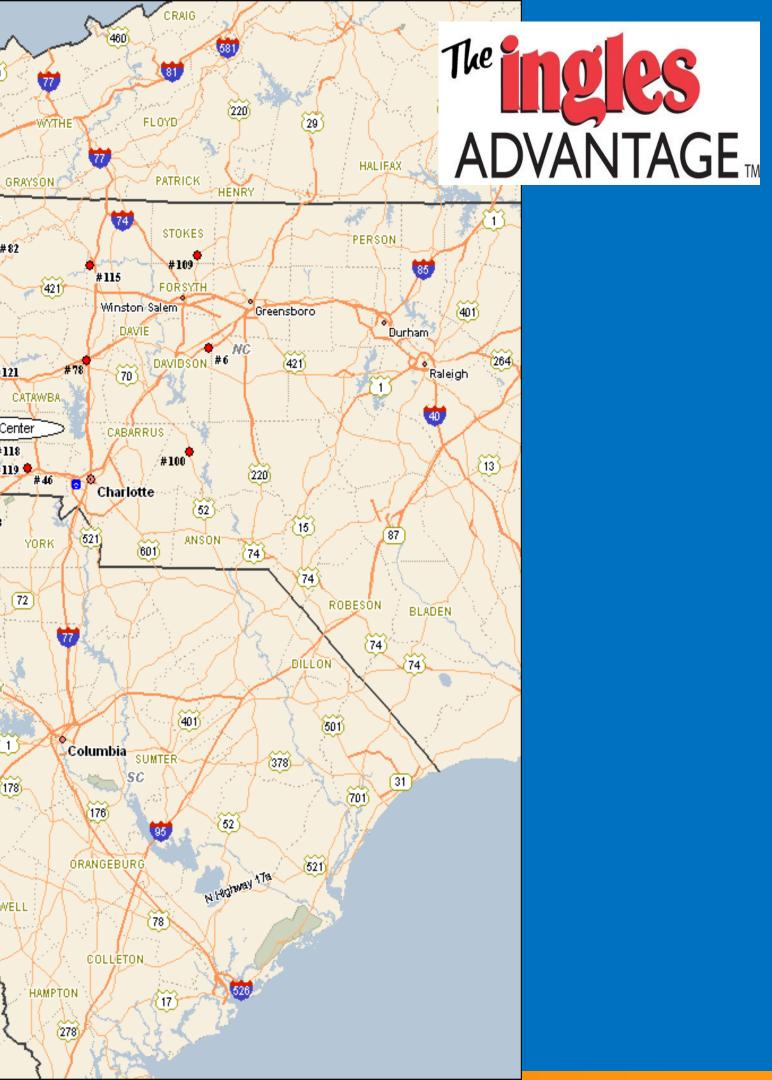
# **Ingles Markets Distribution**





The company's highly efficient warehouse and (460) distribution center is within 275 miles of each 19 19 one of Ingles' 200+ retail stores. # 503 CLAIBORNE # 12 (31e) ASHE SCOTT 65 #372 OVERTON #82 #397 #84. 70 #398 #85 #313 #21 #70 Nashville 40 #305 70 321) #304 Knoxville 411 #91 (31 ΤŇ (321) #71 #121 7#129 0 # 60 WARREN 231 #31 #155 65 (27) 55 127 #87 # 58 # 23 Ingles Distribution Center 43 GRUNDY #27 #12 #118 #850 #119 🗭 (431) #50/ #205 #117 🜩 #14 64 27 #47 #116 #114 #132 #25 64)

202 #203 #301 Chattanooga # 483 # 408 #101 EANNIN (72) LIMESTONE. 9 #36 Us Hivy 72 Alt Huntsville (72) WALKER. #240 (231) #16 #39 #416 DEKALB # 456 # 419 NEWBERRY CULLMAN 278 FLOYD ۰. ELBER1 WINSTON #56 ÷ #65 # 601 25 59 # 453 # 451 # 450 (1) BLOUNT (121) 👯 **4**93 j # 57 \$426 WALKER **#105** # 423 785 178 # 424 # 429 65 AIKEN 20 \$ 445 # 439 # 442 # 444 Birmingham # 443 495 COWETA # 496 # 484 £ 400 # 491 BARNWELL # 457 / SHELBY #497 (431) # 498 BURKE (31) # 403 (231) # 494 WASHINGTON BIBB (441) (301) # 449 CHAMBER Macon Scale Legend (319) 600 SCREVEN. 441 (19) PERRY Mile(s) (341) 25 EMANUEL 85 20 16 DALLAS. BUELOCH MACON



# What are Yard Trucks?

a.k.a. hostlers, spotters, terminal trucks, yard dogs, yard goats, shunt trucks, etc.





- Class 8 • GCWR 81,000 lbs • Up to 25 mph
- Moves trailer & containers at:
  - Distribution Centers
  - Warehouses
  - Manufacturing Plants
  - Agriculture
  - Railyards
  - Ports
  - and more

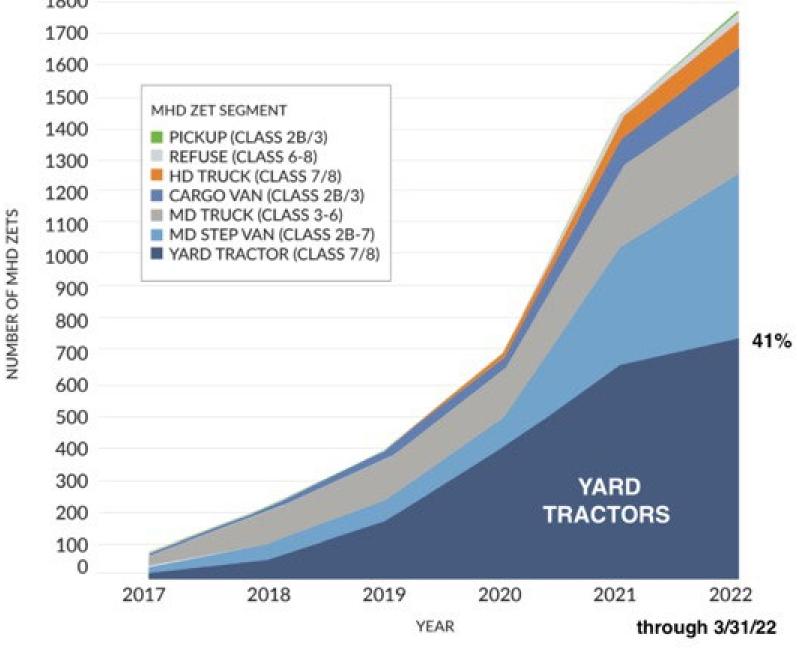
# Why Yard Trucks Should be Part of Every Electrification Conversation

- No range anxiety
- Don't need power to go 60+ mph
- Regen braking turns frequent start/stop into a good thing
- Minimal energy consumption during "idle" time ullet
- Simple charging solutions available, requiring as little as 22kW
- Replaces one of the most inefficient, highest downtime, most-polluting but mission-critical diesel vehicles
- **41%** of ALL medium and heavy-duty zeroemission truck deployments in the US are yard trucks and the majority of those are Orange EV.\*



"One of the best, if not THE best, vehicles for electrification"

# 1800

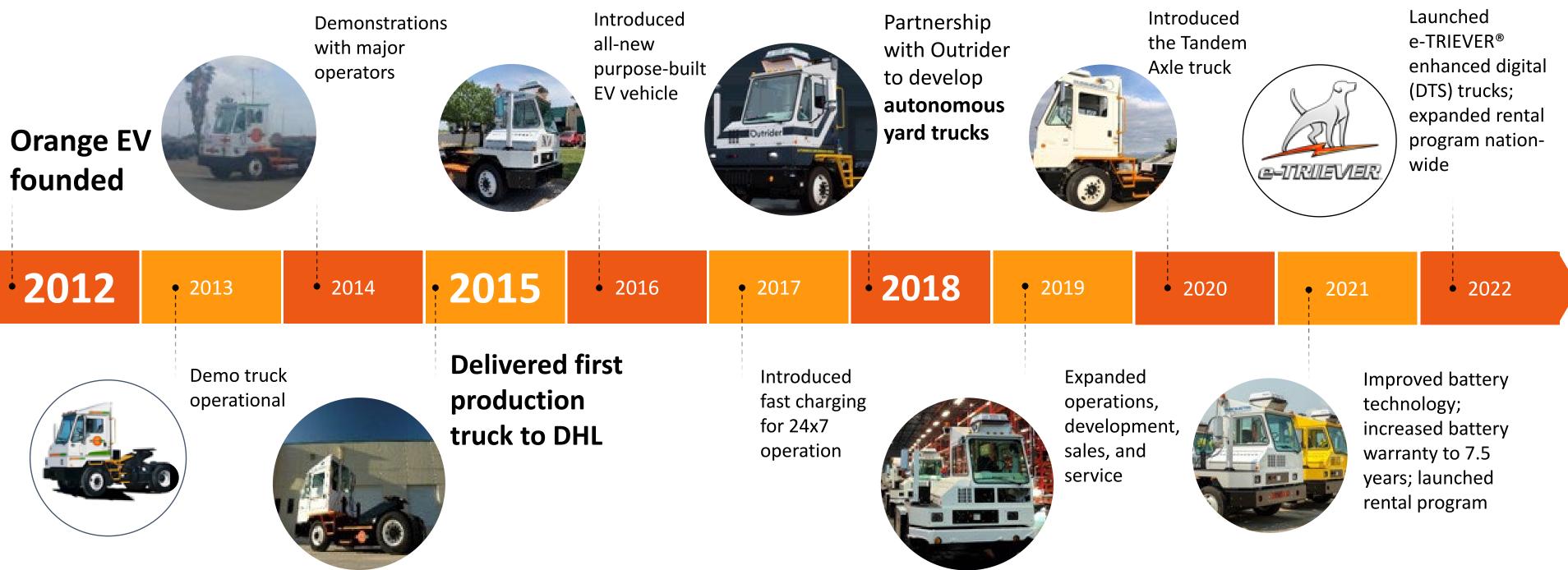




## \*CALSTART "Zeroing in on Zero-Emission Trucks" June 2022 Market Update Cumulative U.S. MHD ZET Deployed Sales (January 2017 - March 2022)

# Why we chose Orange EV

# **Pure play EV truck company**





# LFP Batteries and Yard Trucks: The winning combination

## **Apples-to-Apples Study**

A recent study<sup>1</sup> performed at Sandia National Laboratory has shown Lithium Iron Phosphate (LFP) superiority versus Nickel Manganese Cobalt (NMC) and Nickel Cobalt Aluminum (NCA).

## LFP Lasts Longer

As shown in the graph (left), most of the tested LFP cells lasted thousands of cycles longer than other chemistries, retaining greater than 80% of initial capacity.

<sup>1</sup> "Degradation of Commercial Lithium-Ion Cells as a Function of Chemistry and Cycling Conditions", Yuliya Preger et al 2020 J. Electrochem. Soc. 167 120532

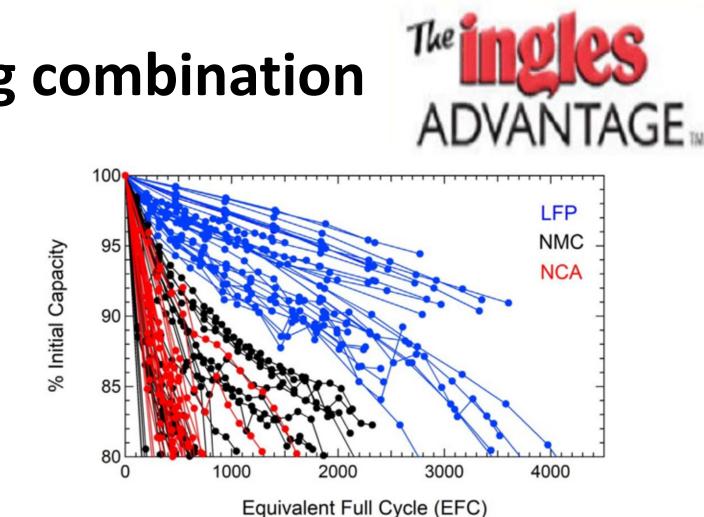
	LFP	NMC	NCA
Can last 10+ years		×	×
Retains 90% of capacity later in lifespan		×	×
Does NOT contain cobalt or nickel		×	×
More resistant to thermal runaway		×	×

## **Compare Battery Chemistries**

Compared to other battery chemistries (NMC and NCA), LFP is more durable and reliable, has better capacity-retention, and is safer and more environmentally friendly. Importantly, LFPs do NOT require complex cooling systems for safety and battery longevity.

## LFP is the Best Choice

The battery is one of the most important components of a battery electric truck, and Lithium Iron Phosphate (LFP) is the superior choice for yard trucks.



**Figure 1.** Discharge capacity retention for all LFP (blue), NMC (black), and NCA (red) cells relative to the initial capacity of each individual cell. Circles are data points from the capacity check at the conclusion of each round of cycling and lines are a guide to the eye.

# **Reasons for Fleet Electrification**

- Don't want to be left behind
- Regulators are making me do it
- Made GHG reduction commitments to investors and others
- Our customers are demanding/delegating it
- Believe it could be a better vehicle that will save me money



# List of Barriers is Long

# The reasons why progress has been slow are valid for many trucks.



# **Typical Barrier #1: Unproven Technology Orange EV Solution: 7+ Year Track Record of Success**

- Over 600 Orange EV Trucks Deployed across 160+ Fleets lacksquare
- 8 million miles and 2.5 million hours of use lacksquare
- Original 2015 trucks still in use, with >20,000 hours and original battery packs lacksquare
  - New trucks come with 7.5 year battery warranty





# **Typical Barrier #2: Current Diesel Trucks are Perfect Orange EV Solution: Huge Improvements vs. Diesel**

# DIESEL

- Downtime of 20%+ is not unusual
- Noisy, vibrations, jerky transmission
- Uncomfortably hot in summer
- Driver spends significant time outside by exhaust stack







# **ORANGE EV**

 Average Downtime of 1-2% • Quiet, smooth, no transmission • Not sitting on engine, great A/C Zero emissions, breathe fresh air

**Typical Barrier #3: Lack of Charging Infrastructure Orange EV Solution:** Trucks and Chargers Stay in **Same Lot** 



# No range anxiety



# **Typical Barrier #4: Insufficient Power Availability Orange EV Solution: Minimized Power Draw**

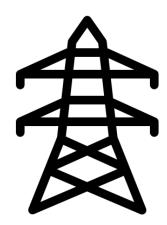
# **Other EV Trucks**

- Chargers at 150kW, 250kW, 350kW, discussion of 1MW
- Utility Company says 1-3 years to scale

# **Orange EV Yard Trucks**

- Orange EV charger that works for most operations up to 16 hrs/day: **22kW**
- Orange EV fast charger for 24/7 operations: **70kW**
- Most Orange EV customers never have to talk to their utility company





# **Typical Barrier #5: Questionable ROI** Payback Potential in 2-3 Years, Without Incentives

Fuel Cost		6000 Annua	l Hour Example
Diesel	2 gal/hr	\$4.00/gallon	\$48,000
Orange EV	7 kWh/hr	\$0.12/kW	\$5,040
			\$42,960
Maintenanc	e & Repair Co	st	
Diesel		\$5.00 / hr	\$30,000
Orange EV		\$2.60 / hr	\$15,600
			\$14,400
			\$57,360

The more you use the truck, the faster it pays you back!

# The more you use the truck, the faster it pays back!

- **Combined Annual Savings**
- **Annual M&R Savings**

- **Annual Fuel Savings**

The

ADVANTAGE

- e

# **Typical Barrier #6: Lack of Trained Technicians Orange EV Solution: Mobile Service from OEV Employees**



# No need to worry if a customer's team or a local dealer isn't trained



# **How Loud? Orange EV Electric vs Diesel**

Orange EV e-TRIEVER<sup>®</sup> trucks are dramatically quieter than their diesel counterparts, providing a safer, healthier environment for operators, site personnel, and the surrounding community.



Data was collected by Orange EV using a decibel meter. Each test was conducted 6 feet away from the vehicle, capturing peak volume data within a 10-second frame. For more details, contact Orange EV.

# **Battery End of Life Plans**

Orange EV e-TRIEVER<sup>®</sup> batteries come with a warranty of 7.5 years or

- 220,000 kWh (100 kWh battery pack) useful life cycle
- 396,000 kWh (180 kWh battery pack) useful cycle life

If batteries need replacement during the warranty period, Orange EV will handle at no cost to the customer. If batteries need replacement sometime after the 7.5-year warranty period, customers may:

- Swap and update for a brand-new battery:
  - \$24,950 for 100 kWh battery pack
  - \$49,995 for 180 kWh battery pack
- Recycle the old battery. Current estimates (excluding packaging and transport) from
  - ~\$1,000 for 100 kWh battery pack
  - ~\$1,900 for 180 kWh battery pack

Note that by the time fleets need to address this issue, there will likely more and better options available. Costs are expected to decrease, and second-life/recycling options should be more plentiful.





# Why Upgrade to an EV Switcher

- Improve operations
- Save money
- Get credit for tangible emissions reduction actions
- Gain a competitive advantage

# Easiest to deploy, easiest to scale

