



eStar™ Electric Truck Overview

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Symposium

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Navistar: Commercial Leader



- **Navistar (NAV)** is a leading U.S. manufacturer of commercial trucks, buses, diesel engines and military vehicles with annual sales of more than \$15B
- Company brands include:
 - **International**[®] commercial and military trucks
 - **MaxxForce**[®] diesel engines
 - **IC** school and commercial buses
 - **Monaco**[®], **Holiday Rambler**[®] **Safari**[®], **Beaver**[®] and **R-Vision**[®] RVs
 - **Workhorse**[®] brand chassis
- Navistar intends to extend its strong market position through leadership in the emerging U.S. market for commercial electric vehicles
- To achieve this objective, Navistar has partnered with Modec – a leading European developer and manufacturer of commercial EVs based in Coventry, England to form a JV (NMEVA, LLC) to manufacture and distribute EVs in the US
- Navistar has the majority share of the JV, controls all Operation and the Board
- Navistar was awarded a \$39,2M grant by the DoE un the ARRA to develop and deploy EVs



President Obama - \$39.2M DOE Announcement



eStar's Mission



eStar: FIRST purpose-built electric truck in its class that balances needs of environment and needs of businesses



eStar – Built For City Business...



Business Smart:

- Companies can actively, visibly proclaim sustainability commitment
- Quiet operation means reduced noise pollution
- Perfect alliance between driver, vehicle urban transport
- Best in Class features such as turning radius
- Labor Costs Lower
 - Fewer mechanical components, less to repair
 - Eliminates downtime with lower maintenance checkpoints

eStar overview



- Pure Plug-in Electric Vehicle
- Purpose-designed and built as EV – not a conversion of conventional ICE vehicle, with BIC features such as 36' turning circle, 180° field of view and low floor
- More than 200 are already in service in Europe
- Gross Vehicle Weight – 12,100 lb (Class 3 truck)
- 4,500 lb payload
- 100 mile range
- Charging requirements:
 - Level II charging station (J1772)
 - 6-8 hours for a complete charge cycle
 - Battery replacement time - 20 minutes



- First recipient of ARRA funding under Transportation Electrification Act to deliver a product to customers
- First commercial EV (and only Class 3 EV) to achieve EPA, CARB and FMVSS certification as a zero emission vehicle
- First production vehicles deployed by FedEx in daily service in LA area



Traction Battery

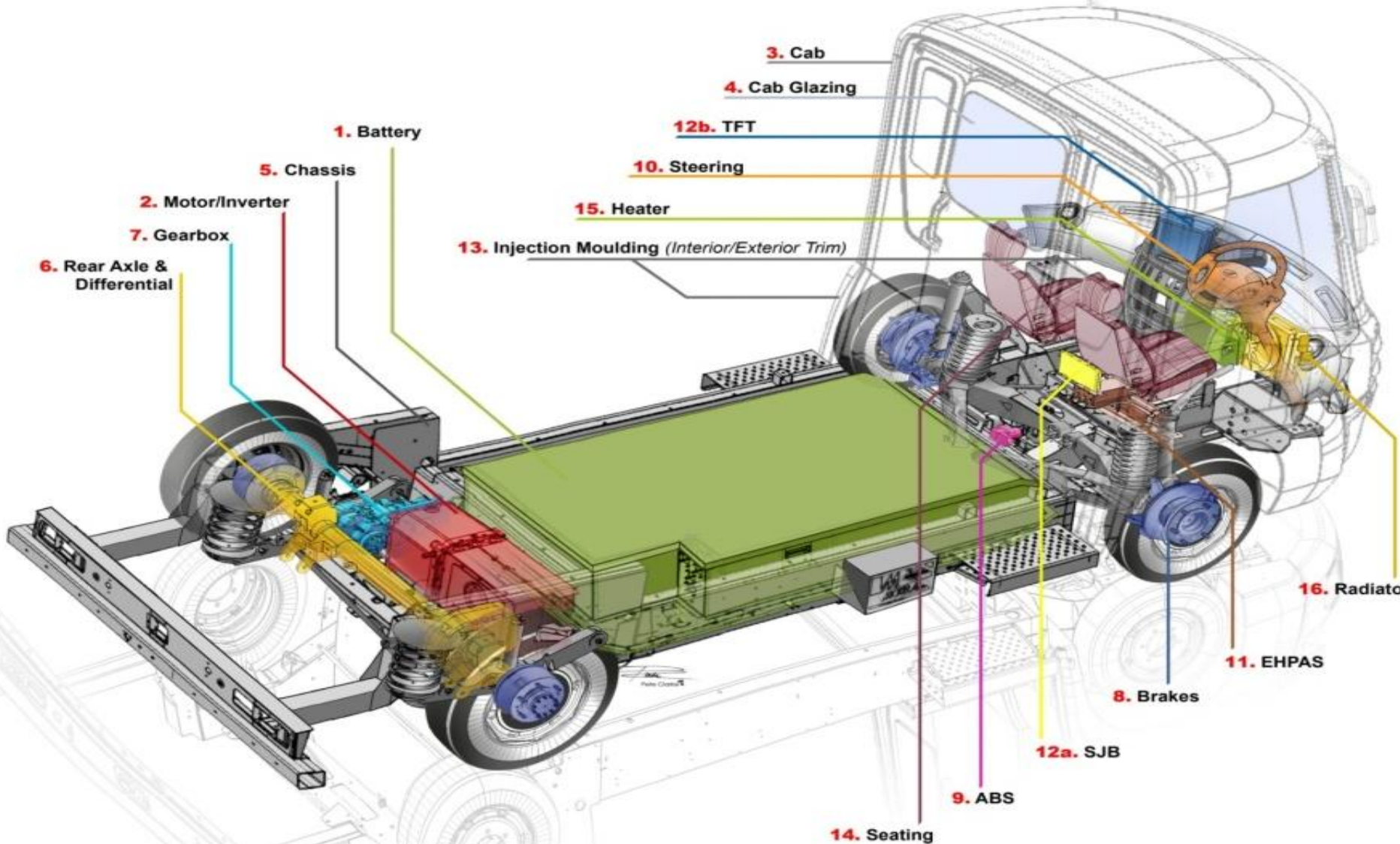


- A123 80kw Nanophosphate™ Li-ion battery (300V)
- 100 mile range 3rd party verified
- Cassette mounts between frame rails
 - Low CG
 - Built to evolve



A123
SYSTEMS

Product / Technical Overview



Applications for “Best” Customer



100 mile range/day, 50 MPH, Frequent stop/start & Central Hub, and as we go forward you “our customer” will tell us what else you need!!

Industry Examples

- Food/Beverage
- General Freight
- Government
- Services
- Telecom
- Utilities
- Universities



Temperature (-5°F to 95°F) in places like...Vancouver, Detroit. Boston, Chicago, San Francisco

Dattco Company History:



- In Business for over 84 years
- Operates a fleet of over 1,000 vehicles
- Over 1,400 employees
- eStar Dealer for the Northeast (NY, NJ, CT, MA, RI, VT, NH, ME)
- Owns Thermo King Northeast – enables us to construct refrigerated units if applicable
- Fabrication Shop (Hartford) has over 30 years of experience and can construct anything imaginable with quality and professionalism
- We are only a phone call away – 24-7

FAQ



- **Is there any special training required to operate the eStar?** *Because it utilizes standard automotive controls operating the eStar is very simple. It only takes a few minutes to learn the start up procedure. We do recommend that all operators become familiar with the emergency response guidelines.*
- **Are there any special license requirements?** *There are no special license requirements because it is an electric vehicle. The driver must be properly licensed for a vehicle of 12,200 pounds GVWR.*
- **How long is the warranty?** *Standard warranty on the eStar is 3 years/60,000 miles.*
- **What is the life expectancy of the battery?** *The battery cassette should last 10 years.*

FAQ



- **What is cab constructed of?** *The cab and body are made of composite materials and mounted on a steel frame.*
- **How is the cab heated?** *The cab uses an electric heating element. A separate heating element is built into the windshield to defog/defrost it.*
- **Does heavy accessory use (wipers, heater, lights, radio) affect driving range?** Accessory drain is very small compared to the energy required to move the vehicle, so the effect of accessory use on range is negligible.

Wakarusa, IN Plant





Thank you.

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Smith Electric

Brett Gipe