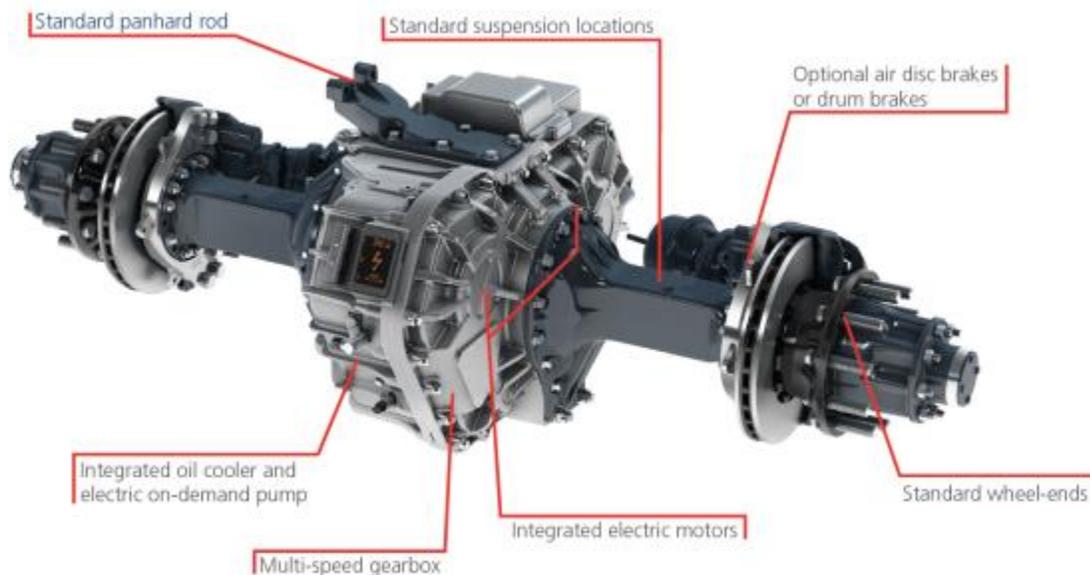


## **Allison introduces new AXE Series e-axles for MD, HD trucks; in Peterbilt 579EV Class 8 EV for testing**

**25 April 2019**

Allison Transmission, a global leader in medium- and heavy-duty propulsion solutions for commercial vehicles, introduced the new AXE Series e-axle systems for medium- and heavy-duty trucks at the Advanced Clean Technology (ACT) Expo in Long Beach, CA. A fully integrated electric powertrain system designed to fit inside a standard frame along the axles of commercial trucks; the AXE Series features electric motors, a 2-speed gearbox, oil coolers and pumps. The offering also includes power electronics for a complete powertrain solution.



The AXE Series electric powertrain will be integrated in Peterbilt's Model 579EV electric Class 8 truck for evaluation and testing. As configured, the truck features 1,475 hp (1,100 kW), delivering industry-leading performance as well as efficiency.

The AXE system is compatible with full battery electric vehicles (BEV), fuel cell range extender electric vehicles (FCEV), and internal combustion engine (ICE) or turbine generator range extenders (REV).

*The AXE Series is the first e-axle in the heavy-duty truck industry to provide this level of power density, size and simplicity. We take tremendous pride that our solution is one of the most efficient and powerful systems ever to be developed for commercial trucks.*

—David S. Graziosi, Allison Transmission President and CEO

The Allison AXE Series, a 2019 Automotive News PACE Award finalist, has a one million-mile design life for medium- and heavy-duty trucks. The system integrates one or two high-speed electric motors and a multi-speed transmission, eliminating the need for additional driveshafts and support structures.

A dual-motor axle has a continuous power of 536 hp (400 kW) and peak output power of 738 hp (550 kW). A tandem axle configuration is also available for these vehicles. The system can handle 100% torque in regenerative braking. The complete integration of the AXE Series delivers increased efficiency and best-in-class continuous power through superior internal cooling.

The AXE Series is available in single- and dual-motor options to package the entire electric powertrain inside a standard frame that exists in almost every global commercial truck including refuse trucks, school buses, and drayage and delivery trucks. This allows the AXE Series to be a bolt-in solution by design, ensuring efficiency in the installation process.

Posted on 25 April 2019 in [Electric \(Battery\)](#), [Heavy-duty](#), [Vehicle Systems](#) | [Permalink](#) | [Comments \(2\)](#)

## Comments

# Three reasons why batteries will power our future trucks, not hydrogen fuel cell.

November 26, 2020



A prominent decarbonization researcher believes battery electric trucks will become the norm for low emissions road freight, as alternatives, like fuel cell vehicles, are more expensive to run.

In an [interview with Clean Energy Wire](#), Auke Hoekstra, an academic researcher from Eindhoven University of Technology, says that fuel cell vehicles “won’t ever be able to compete with electric trucks’ business case.”

Below are three of the key arguments he makes for why battery electric trucks will become the norm, leaving fuel cell vehicles as a distant concept of a bygone moment.

## Battery technology is nearly ready

As he alludes, around 80% of trucks, in the Netherlands at least, travel 750 km (470 miles) per day, at the very most. If you want to haul goods further than this, it starts to get expensive quickly as you’ll need to employ more drivers, and pay overtime.

In reality, most trucks only need to be able to drive 750 km each day. With recent news that Tesla's Semi is [aiming for a peak range of 1,000 km](#), it seems the technology is close to where it needs to be for low emission haulage.

## Infrastructure is simpler and cheaper

What's more, the vast majority of truckers these days don't lead the romanticized lifestyle that Hollywood perhaps suggests. They're not out on the road for weeks at a time, but perform a few trips per day ferrying goods between ports and distribution terminals, where packages are sorted and moved onto smaller vans for final distribution.

*[Read: [Why this security engineer loves working in infosec](#)]*

This means that most trucks spend their nights not out on the road, but at distribution centers being packed ready for the morning shift. In other words, it's the perfect time to recharge the vehicle.

It all seems painfully simple, and it is. Switching to electric trucks requires little change to infrastructure. Assuming the wagons have enough range to complete their entire day's journey, haulage companies only need to buy some fast chargers for their depots, and upgrade their fleet of trucks.

For fuel cell trucks to work, there needs to be vast changes to national fueling infrastructure, depots will also need to invest great sums into their own fueling hardware.

## Battery trucks are easier to design

Moving away from infrastructure-based arguments for a moment, switching to battery electricity trucks offers engineers new, and beneficial, design opportunities.

It's quite common for electric vehicles to be quite a bit heavier than their petrol or diesel counterparts. This isn't necessarily the case with haulage trucks.

According to Hoekstra, designing an electric truck from the ground up can save weight — about three tonnes, in fact.

Credit: Volvo Trucks *Volvo is going to start taking orders for a whole range of electric vehicles from next year.*

*Electric motors are more compact and can be placed close to the wheels, and engineering is far simpler than having to use fuel cells, complex gearboxes, transmissions, and drivetrain components. This means that trucks could be more powerful, reaping the benefits from the torque characteristics of electric motors.*

*Within five years Hoekstra expects that we'll have many 40-tonne battery-powered semis with 800 km of range that could carry more cargo than conventional trucks.*

*Indeed, recently Swedish truck maker Volvo [announced that it would start taking orders in Europe](#) for its fleet of electrically powered haulage vehicles. Better yet, we could see these on roads within the next few years.*

*With all the developments in battery technology being spurred on by the boom in electric passenger vehicles, electric trucks seem to exist in a far more realistic future than fuel cell vehicles.*

*Hoekstra is on to something.*

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