Sanaa electric vehicle safety

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More Energy-EfficientBattery-electric vehicles are more energy-efficient compared to gas-powered vehicles. BEVs can convert 80 to 85% of available energy into forward motion, while conventional gas-powered vehicles only convert 25% to 36% of the energy from gasoline.

Tests performed by the Insurance Institute for Highway Safety (IIHS) show EVs hold up well in a simulated crash. Their batteries make the vehicles heavier, offering better protection to the passengers inside, but that extra weight — hundreds to even thousands of pounds — has traffic safety advocates concerned about the potential risk to other drivers.

"I think it does present significant challenges for safety," National Transportation Safety Board chair Jennifer Homendy told CBS News. "If you think about an impact in a crash with a lighter vehicle with a pedestrian or a cyclist or motorcyclists, it"s going to have a much different outcome than we"ve seen in the past. Terribly tragic."

When asked if she was concerned it could lead to more deaths on the road, Homendy answered, "Absolutely it could. There"s not a focus on the safety aspect of this."

The average vehicle on the roads as of mid-2023 weighed around 4,300 pounds, according to government data, but some newer large EVs weigh thousands of pounds more. That difference, crash experts say, matters.

"It"s simple laws of physics," said Raul Arbelaez, vice president of IIHS" Vehicle Research Center in Ruckersville, Virginia. "The crash for the other vehicle, when you are heavier, is going to be more severe."

The electric Ford F-150 Lightning pickup is up to 2,500 pounds heavier than the lightest gas-powered version of the vehicle model. Rivian"s R1 pickup weighs around 7,100 pounds.

IIHS testing found that a significant weight difference between vehicles can have a noticeable impact in a crash. In a March 2018 test, a 2018 Kia Forte sedan and a 2016 Kia Sorento SUV, weighing 928 pounds more than the sedan, were crashed into each other at 40 miles per hour, simulating a near head-on collision. IIHS found the forces on the driver dummy in the sedan were much greater than those in the SUV.

Post-crash analysis found a high likelihood of head injuries for the driver of the Forte, likely injuries to the leg and possible injuries to the neck and chest. In contrast, the Sorento SUV test dummy had mostly good injury measurements, aside from a possible right leg injury. The sedan also suffered visibly more damage than the SUV.

"In short, the 2018 Forte was a good performer in crash tests and stood out as a very safe choice among small

cars," IIHS spokesman Joseph Young told CBS News. "However, the extra weight of the Sorento pushed the limits of what the smaller car could handle, leading to additional structural intrusion and higher risk of injury, even with the two vehicles traveling at the same speed."

According to a 2011 study published by the National Bureau of Economic Research, a 1,000-pound difference between vehicles results in a 47% increase in the likelihood that a crash turns deadly.

"A 7,000-pound vehicle hitting a 4,000-pound SUV, the impact on that smaller vehicle is going to be quite significant," said Arbelaez. "It is going to be a more severe crash with more intrusion and higher levels of injury."