



Everything
on Wheels

All-Electric Trucks

Some deliveries of electric trucks are already underway, as these innovative new vehicles become one of the industry's dominant headlines.

Here's a look at what's on the way, from trend startups to established manufacturers.

RIVIAN R1T

This startup-built EV is said to go 300 miles on a full charge, and has already been hailed as an Editors' Choice award winner by Car and Driver. Sized somewhere between a Ford Ranger and a Ram 1500, the R1T was the first electric truck to make it to production.

FORD F-150 LIGHTNING

Ford manufactures America's best-selling truck, so their entry into the EV market was a very big deal. The new Lightning, available in spring 2022, offers standard all-wheel drive and an estimated range of about 230 miles. A larger battery option ups the horsepower and range.

GMC HUMMER EV

GM discontinued this gas-guzzling model in 2010, only to bring it back as an all-electric vehicle. The new Hummer debuts first as a pickup, before resuming life as an SUV. Its top powertrain



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option offers 1,000 horsepower via three electric motors. Reservations are being taken now.

TESLA CYBERTRUCK

Tesla clearly aimed to break with convention, right down to the odd shape. But heavy-duty trucks lovers took notice when they promised 14,000 pounds of towing and a 500-mile single-charge range — numbers that outpace the F-150 Lightning. Its arrival time remains uncertain.

CHEVROLET SILVERADO

Unlike the F-150 Lightning, the EV Silverado looks almost nothing like its gas-powered Chevrolet counterpart. This totally redesigned truck features a patented GM electric system that offers a manufacturer-estimated 400 miles with a full charge. Sales are set to begin in 2023.

GMC SIERRA EV

A brand sibling to the GMC Hummer EV, the all-electric Sierra is expected to mirror the

features and performance of Chevy's EV-model Silverado — meaning a battery range of roughly 400 miles. This truck, which launches in GMC's popular Denali trim, could be on sale as early as 2023.

CANOO PICKUP TRUCK

This vehicle forgoes the hood that EVs obviously don't really need, opting for a cab-forward design similar to the old Dodge A100. Canoo hasn't set a launch date, though this truck could also arrive as early as 2023.

Meanwhile, they're promising a 200-mile full-charge range and 500 horsepower.

STAFFORD LORDSTOWN ENDURANCE

The startup-made Endurance is said to have a range of 250 miles, and a towing capacity of 7,500 pounds. Designed to be a fleet vehicle, the truck has a governed top speed of 80 miles per hour. It will be made available to individual drivers, though the exact date is still unknown.

Utility-Terrain Vehicles

UTVs go by many names, but all of them leverage their larger size to provide a roomy alternative to traditional all-terrain vehicles.

They'll give you lots more space for camping, outdoors and hunting gear, whether you call them utility-terrain vehicles, utility-task vehicles or simply side-by-sides.

WHAT THEY ARE

A UTV is similar to an ATV, in that both can be used for outdoor fun, and both have models meant for work. UTVs, however, are larger and designed for towing and hauling with multiple riders. UTVs have a car-like standard wheel base, but some have more than four wheels for specialized purposes. They handle more like a car than an ATV, with a rear bed and the capacity for two or four passengers — thus the nickname “side-by-side.” They're more powerful and faster than ATVs, but not as agile. Many have cabins, though they are usually open like a golf cart. A UTV's maximum speed is between 25 and 50 miles per hour.

The final difference between ATVs and UTVs relates to price: A utility-terrain vehicle will typically be far more expensive, in particular with multiple customizations.

PRIZED VERSATILITY

UTVs first came into wide use by farmers, ranchers and park personnel who needed compact transportation with plenty of storage.

They've grown more and more popular because UTVs are, by design, more versatile than your average pickup truck and more useful than any ATV.

Outdoorsy types zeroed in on the vehicle's toughness, while enjoying how easy a UTV made gear-heavy hunting, fishing and hiking trips. As the UTV's popularity grew, aftermarket companies have unveiled an array of customizing options, including light bars, enhanced suspension, custom wheels, in-cab heaters and even stereo systems.

PLAY IT SAFE

There is a notable risk of a rollover accident with UTVs, according to the U.S. Department of Agriculture. Be careful not to drive on slopes beyond the manufacturer's specs, overload the cargo bed, or climb too steeply. Rugged paths and other uneven terrain can also lead to vehicle tipping. The UTV's truck-like

cab and seats allow everyone to sit upright, a more comfortable option for older riders. But always wear your seatbelt while operating a UTV. The options to add roll bars and a windshield offers additional safety that ATVs can't provide. Everyone should complete the hands-on safety course offered by the All-Terrain Vehicle Safety Institute.



Pay-As-You-Go Rides

The ride-sharing industry has new competition these days, as app-based pay-as-you-go transportation services begin popping up nationwide.

Here's a deeper dive into this handy new innovation.

HOW THEY WORK

Pay-as-you-go rides, whether by bike or scooter, offer pedestrians the chance to get there faster without contributing to the congestion that plagues most cities. You unlock your ride with a credit or debit card or smart device via a reader on the handle bars. The vehicles are tracked by GPS, so they can be left at your destination where they'll be ready for the next rider. As pay-as-you-go stations continue populating everywhere, these rides are becoming a more and more convenient mode of getting around town.

A POSITIVE IMPACT

So-called "micro mobility" is budget friendly, hip and — most important to many these days — sustainable. A national traffic scorecard estimated that American motorists spend an average of about 99 hours a year in congestion, losing billions of dollars to fuel and vehicle wear-and-tear costs. The problem isn't going away: One projection showed that an



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additional 2.5 billion people will live in urban areas across the globe by 2050.

SCOOTERS

A pioneering company called Bird launched a fleet of pay-as-you-go scooters in 2017 at Santa Monica, California, helping to kick off a revolution in lessening traffic through rented personal transporta-

tion. A year later, Bird reported that it had provided more than 10 million rides across more than 100 American cities. Many, many others have since joined this fast-growing segment. That's because it's a particularly useful mode of travel for those who have only a quick nearby errand to run, rather than calling a ride-sharing company or putting extra

miles on your personal vehicle. Most companies charge a flat fee to get started, and then have additional charges per minute.

BICYCLES

Bike sharing has seen explosive growth in the last five years. The number of U.S. shares more than doubled year over year to 100,000 in 2017; by

2021, there were nearly 10 million bikes shared worldwide. New York City had more bike shares during the last four months of 2020 than in all of 2019, according to the city's department of transportation. The global bike-sharing market was valued at \$3.43 billion in 2019; Allied Market Research predicts it will reach some \$7 billion by 2027.

Tractors

The introduction of tractors revolutionized the lives of farmers, who'd previously relied on the labor of animals to plant and harvest.

Farms grew exponentially in both production and size, with the average acreage now at more than 430 according to the U.S. Department of Agriculture. That's thanks in no small part the arrival of these hard-working vehicles.

A FARMING REVOLUTION

In 1920, America boasted more than 25 million horses and mules, according to the USDA. Most were put to work on our farms, where the primary responsibility was pulling wagons and transporting harvested crops. Tractors began to have wider use during the same decade, and farmers learned that they could pull those loads, turn soil and more consistently harvest — and they never grew tired or old. Vast acreages were converted from growing oats, since that was what the farm animals were fed. Farmers were also able to expand their most valuable crops, feeding many, many more people in the same amount of time.

TRENDS IN TRACTORS

John Deere collaborated with NASA in 1996 to create



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the first GPS receiver for tractors. Within 25 years, farmers were using these systems on the vast majority of North America's agricultural acreage. Microchips became an every day part of building and operating a tractor, leading to huge issues when manufacturing these semiconductors slowed because of pandemic-related supply chain issues.

The problem has lingered into 2022, in what one analyst described as “chipageddon.” The latest innovation in tractors will be self-operating models. John Deere introduced the fully autonomous 8R tractor at the Consumer Electronics Show in Las Vegas. Case IH and AGCO have similar projects in the works.

BUY OR LEASE

Deciding whether to buy or lease a tractor involves weighing specific, very different advantages. Buying equipment can lead to tax benefits. Owners become intimately familiar with a particular tractor, and typically comes with a warranty that provides lots of peace of mind. Leasing, on the other

hand, may be a better option for those who only need this machinery temporarily, those with early capital-raising issues, or anyone who is nearer to the end of their time in farming.

You might also lease if a tractor becomes suddenly disabled, and you want to put off expensive repairs until after the farming season.

Four-Wheel vs. All-Wheel Drive

They sound similar, but there are in fact significant contrasts between all-wheel drive and four-wheel drive systems.

Here's how to understand the difference and make an informed decision.

FOUR-WHEEL DRIVE

The general operation is the same, and in some cases drivers get similar results from four-wheel drive and all-wheel drive functions. But four-wheel drive is considered a part-time system, since it's typically engaged by the driver as needed. All-wheel systems instead rely on a computer to shift the engine's output. In 4WD mode, an intricate collection of gears called a transfer case distributes power to the differentials, which then turn the front and rear axles. Newer vehicles allow users to engage four-wheel drive with a switch in the passenger cabin. Before that innovation, drivers had to exit the vehicle to disengage manual-locking hubs.

ALL-WHEEL DRIVE

Unlike four-wheel drive systems, drivers so not have to manually activate all-wheel drive. It's always on, making adjustments based on information from sensors that collect traction data. The inboard computer then determines what's needed to remain securely on the roadway. All-



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wheel drive vehicles have a center differential, rather than a transfer case, and it distributes needed power from the transmission to the axles. Power is usually split 50/50, but some systems like that of the Acura Super Handling AWD can reroute as much as 100% of power between axles.

WHERE YOU'LL FIND IT

All-wheel drive is exclusive to

cars and minivans, while trucks use four-wheel drive. Only crossovers and SUVs can accommodate both systems. The average vehicle generates propulsion using the rear or front wheels. Many four-wheel or all-wheel models operate the same way when conditions don't require more traction. Models with front-wheel propulsion like the Toyota Camry AWD are usually lighter,

because they don't include the systems needed to distribute power to the back of the vehicle. SUVs typically have more clearance — ideal for off-roading or accumulated snow.

COMPARE AND CONTRAST

All-wheel drive offers added traction in poor weather situations, operates automatically and is more fuel efficient. It's

more expensive than four-wheel drive, however, and isn't necessarily engineered for more extreme conditions. Four-wheel drive has more towing capability, and is uniquely suited for snow and ice since the extra weight leads to improved traction. But you're giving away some fuel economy, and that additional weight lengthens stopping distances.

Self-Driving Cars

Automation and crash-avoidance tech have perhaps inevitably led to the idea of self-driving cars.

But how do they work — and can you really catch a quick nap while the computer watches the road?

HOW WOULD THEY WORK?

Sensors that already aid in parking are used, along with real-time GPS information, to help navigate the roadway. Light Detection and Ranging, known as Lidar, will also play a critical role. A cluster of rotating lasers sits on the roof of the car, providing a continuous 360-degree scan. These scans are then processed to produce data reflecting conditions around the vehicle. The software is designed to one day differentiate between people, cars, animals, bikes and approaching road hazards, then adjust the car's controls as needed. In the meantime, today's support technology is meant to reduce driver workload through lane-keeping assistance, adaptive cruise-control capability and other hands-free options.

LIFE-SAVING TECHNOLOGY

Wider usage of self-driving cars is predicted to greatly lower the number of traffic-related fatalities and injuries —



IAN MADDOX/WIKIMEDIA COMMONS

and that's a growing problem: More than 20,000 people died in crashes over the first half of 2021. By the end of the year, more than 42,000 people had died — up 18% compared to 2019. One study estimated that autonomous cars could decrease these fatalities by as much as 90%. Accidents rank as the second-leading cause of death in the U.S.; they

would almost drop out of the Top 10.

Waymo, a member of the Google family of companies, is testing an autonomous ride-share fleet that's been constructed inside converted Chrysler minivans.

ARE THEY REALLY AUTONOMOUS?

The short answer is: Not

yet. Many are pushing toward that goal, but no automaker currently sells a completely autonomous system. So, it's still not safe to stop paying attention when driving in cars being sold with this emerging technology.

Tesla is promoting automation more aggressively than any other American manufacturer, but even their ad mate-

rials remind drivers that the autopilot feature is only intended to be used by a “fully attentive driver” who is keeping their “hands on the wheel and is prepared to take over at any moment.”

They promise future updates for these features, but add that at present they “do not make the vehicle autonomous.”

Recreational Vehicles

A pandemic-related boom in the recreational vehicle market has continued into 2022, as vacationers continue to seek a safer way to travel.

It helps that RVs have never been more luxurious, too.

CONVENIENT AND CONNECTED

There's nothing like the independence a RV provides, as you set your own pace while traveling from site to site. At the same time, the world is at your fingertips: The latest models now come equipped with mobile internet, navigation systems, Wi-Fi boosters and even satellite TV. Together, they give you the best of both worlds: An up close-and-personal experience with the outdoors, with all of the best at-home conveniences. The only question is how much, or how little, room you need along the way. Recreational vehicles range in classes from A through C, with the principal differences being size and cost. Once you're behind the wheel, set a course for fun!

2022 RV TRENDS

New vehicle prices ticked up in 2021 because of supply line issues, and that also impacted the RV segment. In keeping, a record number of



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travelers are renting RVs now — a decision that can make economic sense while also boosting our sustainability. Prices to rent moved up slightly, too. But a tighter new RV market certainly hasn't dampened interest, as more than 60% of respondents in one major poll said they have opted to drive rather than fly

since the beginning of the pandemic. Younger travelers are becoming RV enthusiasts, as well. The average owner is 48 and married, with above-average income. But 18-to-34 year olds have moved up to 22% of the market.

CONSIDERING AN RV?

If you're a first-time RV

buyer, remember that it requires a much different driving approach from a car or truck.

Consider enrolling in one of the multiple RV driving schools throughout the country. Local community colleges often sponsor accredited training courses, too. Next, be aware that every RV has a

checklist of needed items beyond a filled gas tank. Make sure you have a surge protector, electrical adapters, some RV-safe toilet paper, a water-pressure regulator, leveling blocks and wheel chocks, plenty of extension cords, jumper cables, extra oil and transmission fluid, a fire extinguisher and flashlights.