

Electric Vehicles

Electric vehicles are not just better for the environment, they also have the potential to be faster, stronger, drive further and be less expensive than their carbon fuel alternatives. Potential – we still have a long way to go. Autonomous driving is also easier to manage with electric vehicles. Here are a few examples of the progress being made.

Cars

If you have a car that is not particularly old, you can probably connect your car to your mobile phone. This essentially makes your car a peripheral of your phone. You may also have OnStar or a similar capability that connects your car to emergency sorts of services like accident reporting, locating your car and unlocking it remotely so you can retrieve your keys. Your car is connected, but in a limited way. Most of its real networking functionality like playing your music or using it as a speakerphone is routed through your mobile phone.



The cars coming out now have more ambitious networking with their own SIM (or eSIM) card and mobile subscription. In many ways, your car is a mobile phone. This allows your car to be a Wi-Fi hotspot, report more information about the car and supply network services even if (the horror) you don't have your mobile phone. Your car is always on the network, so you can expect rich network services. You can add new software features to your car over the air (OTA). It can stream video and games. It can communicate not only with the manufacturer, but also with road and weather networks and even other connected vehicles or parking systems.

5G will make the data transmission faster and with less delay. As cities become smart, your car can communicate with city infrastructure like traffic lights and emergency services. Your car will automatically deal with different carriers so you can connect to the best network available regardless of where you drive – or where your autonomous vehicle takes you as you relax with a movie.

[TuSimple – Autonomous Freight Consortium](#)

TuSimple has created a consortium called the Autonomous Freight Network. They claim that such a network can reduce transport costs by 30%. Autonomous freight hauling has several advantages over the current system. Driverless vehicles can be faster and more efficient. There is no stopping for lunch or sleeping. They don't get lost. There isn't any alcohol problem to speak of. Of course, it will make truck stops much less social.



[Silverado EV](#)



As mentioned previously, GM announce their Silverado EV coming out in 2023 that can get 400 miles on a charge and starts out at a price of \$40,000. (I suspect the \$40,000 model is not the one that gets 400 miles.) This truck is based on the GM Ultium platform that will be the basis of all their electric vehicles. This platform includes the battery, drive train and basic frame of the car, but can be reconfigured for different models. GM and other auto manufacturers are moving towards an all-electric vehicle future. FedEx and Walmart intend to use the Ultium platform for GM delivery vehicles in development

[Autonomous Indy Race](#)

One particularly interesting feature at CES 2022 was the autonomous Indy car race. Rather than drivers putting their lives on the line, there were engineers risking their reputations and a very expensive Indy race car. At the original race in Indianapolis last fall, the cars had the track to themselves and were timed. Racers were told to start their software instead of their engines. Of course, a Boston Robotics dog robot waved the flag to start the race. At the autonomous challenge in Las Vegas, the cars were raced two at a time. Yes, there was a jet flyover and somebody sang the national anthem. We're not animals.



The final race pitted TUM versus Polimove (not Polmolive as I originally thought). The race was set up as a passing challenge. The front car had to maintain a specific speed on the inside lane while the challenger passed it before crossing the line. Speeds were gradually increased as the race went on. When they got to 150 mph, the TUM car spun out. That gave the win to Polimove. The Polimove team consisted of students from University of Alabama and the Polytechnical University of Milan.

Moonbike – Electric Snowmicycle



As I briefly mentioned before, I love the MoonBike. The MoonBike is a cross between an electric snowmobile and an electric motorcycle. Whatever it is, it looks FUN! I expect it would be a lot more fun on the snow rather than it was on the carpet in a convention hall.

Hyundai – Pods

Hyundai showed a “pod” concept vehicle that could transport a single person autonomously. These pods also fit into brackets on elevator systems to become one-person seated elevators. Out on the street, a bunch of pods can hop onto an autonomous Pod bus to get around town. Are you ready for the pod future? I’m not sure I am. I’m less concerned about the technology being possible than I am about people wanting this future.



Bosch – fuel cell for EVs



Electric cars can be better than internal combustion cars in many ways. They are quiet. They have more torque. They don’t burn carbon fuels. They are simpler and less expensive to run. Where they have trouble is in getting all that portable electricity. Right now, the solution is batteries, but batteries take a long time to charge and are heavy. Bosch is looking at fuel cells as an alternative. Fuel cells convert hydrogen gas (a real gas, not liquid gasoline) to electricity. A stack of 400 fuel cells will deliver up to 120 kW of power. 1 kg of hydrogen will take you about 100 km. While filling up your car with hydrogen may be a bit cumbersome, it can be much faster than taking lunch in a parking lot while you wait for your car to charge. Burning hydrogen is also a clean process with zero local emissions (except water). Most car companies are betting big on a battery centered mobility future, but it’s good that companies like Bosch are exploring alternatives.

[Indi EV – EV Startup with Open Source SDK](#)

Indi EV is a Los Angeles-based independent EV company that showed its first vehicle, the INDI One. Its main distinguishing feature is its integrated computer (which it says is a supercomputer). Super or not, it's an impressive car that is the first to put that excess computing power to work mining cryptocurrency. It supports an open-source network that will release a software development kit for third-party development mods. It's also the first EV optimized for gaming. You can also capture, edit and upload content from its multiple on-board cameras. Despite all the non-car features, it still has a peppy little engine that can go from 0-60 in 5.5 seconds and has a range of 300 miles on a charge with a top speed of 130 mph. It should hit the market in Q4 of 2022.



[Fisker – Ocean EV SUV](#)



The Fisker Ocean SUV is a car we ran across in 2020. There is a solar panel roof that they claim can add 1500 miles of driving to the car each year. They also feature a vegan interior with upcycled materials made from plastic bottles, rubber waste, worn out T-Shirts and abandoned fishing nets. I think a friend of mine in high school had that same interior in his car. The Ocean can also power your home for up to 7 days in a pinch.

[Stellantis – EV Consolidation](#)



I guess I am not much of an auto insider because I have never heard of Stellantis and yet they are the fourth largest car maker in the world. Just a year ago, several brands merged into a new multinational entity called Stellantis. They own many major brands including Jeep, Chrysler, Maserati, Opel and Fiat. They have committed 30 billion Euros to the development of electric vehicles through 2025.

[LG – Vision OmniPod](#)

The LG Vision OmniPod is a single vehicle where you can live work and play. So if you're into the van life, this is the premium model. If your physical isolation isn't enough, you can use the moving "Meta Environment Screen" to simulate any landscape. An AI concierge virtual assistant can respond to various themes. There are also "home" appliances standardized for the vehicle environment. If all of this seems a bit too futuristic, I'm sure you can bunk with a friend who lives in a van down by the river.



[Mercedes-Benz – Vision EQXX](#)

The Mercedes-Benz Vision EQXX prototype extends the boundaries (literally) of EVs. Its solar roof and aerodynamic design give this car a range of 620 miles (1,000 km).

[Damon – Hypersports EV Motorcycles](#)

Damon unveiled its new HyperFighter electric motorcycle at CES this year. The top trim versions boast 200 hp and 200 NM of torque. That means they can go 0-60 mph in less than 3 seconds. They can go up to 170 mph (there are many reasons not to test this) and they have about 120 mile range on a full charge. These motorcycles also have a special "CoPilot" system of sensors (including a rear camera) that can warn of following too closely and other things by vibrating the handlebars. The one thing you won't get with an electric motorcycle is ear-splitting noise.

