The car of the future

Electric propulsion: the end of fossil fuels

The car of the future is a shifting concept, evolving from the neon-lit time machines of '80s cinema to the "software-defined vehicles" (SDVs) hitting roads today. Electric propulsion is already transforming the automotive industry.

Electric vehicles (EVs) use batteries instead of internal combustion engines, eliminating harmful exhaust emissions. This change is essential to reduce air pollution and fight climate change. In addition, electric motors are more efficient and quieter than traditional engines. The key advantages of electric propulsion include:

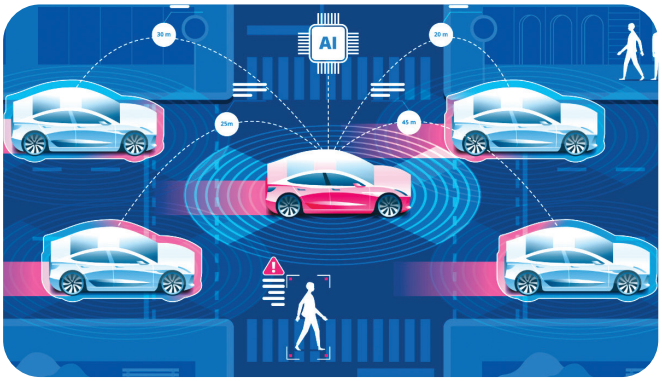
- zero tailpipe emissions;
- lower maintenance costs due to fewer moving parts;
- higher energy efficiency compared to petrol engines;
- the possibility of charging at home or public stations.

As battery technology improves, electric cars will travel longer distances and recharge faster, making them practical for everyone.

Autonomous driving: safer and smarter roads

Autonomous driving is another major innovation. Self-driving cars use sensors, cameras, and artificial intelligence to move without human control. These systems can detect obstacles, follow traffic rules, and react faster than human drivers, reducing human error responsible for most car accidents.

Some important features of autonomous driving are:



- advanced sensors that monitor the environment;
- artificial intelligence that makes driving decisions;
- automatic braking and collision avoidance systems;
- reduced driver stress and increased comfort.

Connectivity: cars as digital devices

Future cars will be fully connected to the Internet and other devices. They will communicate with other vehicles, traffic lights, and infrastructure. This system is called vehicle-to-everything (V2X) communication and offers:

- real-time navigation and traffic optimisation;
- remote diagnostics and predictive maintenance;
- integration with smartphones and smart homes;
- personalised settings for each driver.

Sustainable materials and environmental responsibility

Sustainability is another key aspect of future vehicles. Manufacturers are developing eco-friendly materials to reduce environmental impact. These include recycled plastics, natural fibres, and biodegradable components. Production processes are also becoming more sustainable. Companies are reducing energy consumption and using renewable energy sources in factories. This helps lower the carbon footprint of vehicle production. Sustainable innovations include recycled and biodegradable interior materials, lightweight components that improve efficiency, battery recycling and reuse programs.

footprint: *impronta*
to hit roads: *mettersi in viaggio*
tailpipe: *tubo di scarico*

1 Answer the questions.

1. What is meant by "software-defined vehicles" (SDVs)?
2. Why is electric propulsion important for the environment?
3. What do electric vehicles use instead of internal combustion engines?
4. Why are electric motors more efficient than traditional engines?
5. What is one economic advantage of electric vehicles?
6. What technologies do autonomous cars use to drive without human control?
7. How can autonomous driving improve road safety?
8. What is vehicle-to-everything (V2X) communication?
9. What are some examples of eco-friendly materials used in future cars?
10. How are manufacturers reducing the environmental impact of car production?

2 Put each word/phrase into the correct category.

Autonomous driving • V2X communication • Electric motor • Recycled plastics • Biodegradable components • Battery • Charging at home • AI (Artificial Intelligence) • Lower maintenance • Sensors • Vehicle-to-everything • Lightweight components • Zero tailpipe emissions

Technology	Materials	Processes / actions

3 Find words in the text that mean the following.

1. Ability to connect .....
2. Friendly to the environment .....
3. Things that detect objects .....
4. Power stored in batteries .....
5. To make something better or more efficient .....
6. Elements used to build something .....

THE BIRTH OF AUTONOMOUS DRIVING

Autonomous driving traces back to the 1980s, when German engineer Ernst Dickmanns built a Mercedes-Benz van that drove itself at highway speeds using cameras and computers. Decades later, the DARPA Grand Challenge accelerated progress, inspiring companies like Google and Waymo to develop today's self-driving cars we know now today.