

Press Release

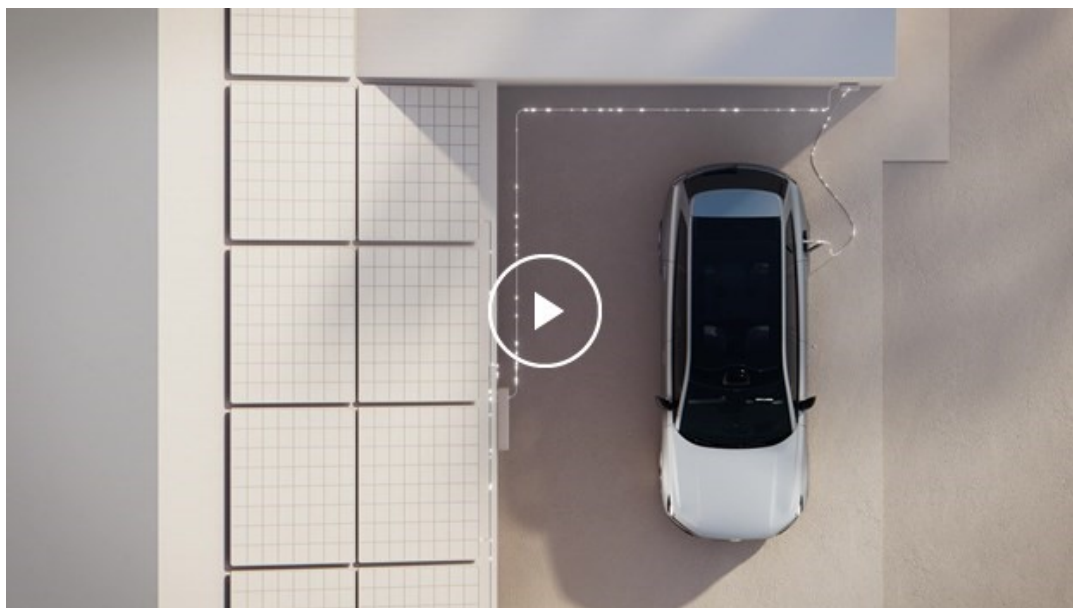
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Volvo Cars launches new Energy Solutions business, embracing wider climate potential of electric cars

Our electric cars are an important step towards a more sustainable society, but the cars and their batteries can do so much more than eliminate tailpipe emissions. For example, did you know that stationary electric cars have the potential to power your house, your appliances or even return power to the energy grid?

To capitalise on that potential and help support the transition to a smarter, more sustainable and more efficient energy grid, we're now launching Volvo Cars Energy Solutions. It's a completely new business unit that will offer energy storage and charging-related technologies and services which form the connective tissue between our cars, our customers' lives, the efficient use of energy and society at large.

For example, bi-directional charging is a technology that allows an electric car to give back extra battery power to a compatible grid, helping to balance the grid during peak hours and reduce the need for fossil-generated electricity. Our new flagship, the fully electric EX90 SUV, will be the first Volvo car equipped with all the necessary hardware and (over time) software to enable bi-directional charging and direct energy storage from solar.



Together with Göteborg Energi Nät AB, the local grid company in our Swedish hometown of Gothenburg, we're now launching one of the first vehicle-to-grid (V2G) pilot programmes that aims to test such V2G technologies on the local energy grid and in a home environment with real customers. The pilot deliberately uses a low-cost AC wallbox because it will help to accelerate widespread adoption of the technology.

The pilot project not only aims to gain acceptance from a grid company and to demonstrate to

other grid companies that V2G programmes can provide tangible benefits, but to create a testing arena for new technologies that are central to the future of Volvo Cars outside our labs.

“With bi-directional charging, you can use your car battery as an extra energy supply, for example to provide power to your home, other electric devices or another electric Volvo car,” said Alexander Petrofski, the new Head of Volvo Cars Energy Solutions. “The next step would be to enable this feature all around Sweden, and hopefully that will pave the way for even broader acceptance of similar charging and energy storage services around Europe.”

Ample spare capacity

As we aim to be a fully electric car company by 2030, we'll bring millions of electric Volvo cars to the roads in the coming years. Our engineers have calculated that the total battery capacity of that fleet will reach around 50 GWh by the mid-decade. While these cars will use several TWh in electricity each year, this energy consumption is flexible and can be moved in time via smart charging.

At the same time, data from our Volvo fleet shows that the average daily drive in Europe uses less than 10 kWh, while 90 per cent of all daily drives use less than 20 kWh. This means there is ample spare battery capacity left that can be used for other purposes, with the possibility of both financial benefits for our customers and significant climate benefits.

This is where bi-directional charging comes into play: a technology that allows customers to repurpose energy stored in the battery of their electric Volvo at a later stage. V2G is one of those scenarios because it allows for energy to be delivered back to the power grid from the battery of an electric car when the demand for electricity is higher – against compensation.

“With the help of smart charging, you can charge your electric Volvo at the best available time from a sustainability and economy perspective,” said Alexander Petrofski. “Now imagine you could use that energy later, perhaps during peak times when prices are higher and the energy mix less sustainable. The idea with building an energy ecosystem around your car and the batteries is that it allows you to save money and reduce your CO₂ emissions, while energy firms benefit from reduced grid investments and a lower overall impact on the environment.”

V2G is just one of the technologies that we envision as part of that ecosystem offer under the Volvo Cars Energy Solutions banner. We're also looking at vehicle-to-home (V2H) products that allow you to send back energy to your house and lower your energy bill, as well as vehicle-to-load (V2L) services whereby your electric car battery powers your camping gear or charges your electric bicycle.

Over time, we anticipate Volvo Cars Energy Solutions will generate significant new revenues from energy-related products and services every year, as well as new products not previously offered by Volvo Cars. In doing so, Energy Solutions is set to add value to our core business, our customers' daily lives and the environment.

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Volvo Cars in 2022

For the full year 2022, Volvo Car Group recorded an operating profit of SEK 22.3 billion. Revenue in 2022 amounted to SEK 330.1 billion, while global sales reached 615,121 cars.

About Volvo Car Group

Volvo Cars was founded in 1927. Today, it is one of the most well-known and respected car brands in the world with sales to customers in more than 100 countries. Volvo Cars is listed on the Nasdaq Stockholm exchange, where it is traded under the ticker “VOLCAR B”.

Volvo Cars aims to provide customers with the Freedom to Move in a personal, sustainable and safe way. This is reflected in its ambition to become a fully electric car maker by 2030 and in its commitment to an ongoing reduction of its carbon footprint, with the ambition to be a climate-neutral company by 2040.

As of December 2022, Volvo Cars employed approximately 43,200 full-time employees. Volvo Cars' head office, product development, marketing and administration functions are mainly

located in Gothenburg, Sweden. Volvo Cars' production plants are located in Gothenburg, Ghent (Belgium), South Carolina (US), Chengdu, Daqing and Taizhou (China). The company also has R&D and design centres in Gothenburg and Shanghai (China).

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