

## PRESS RELEASE

# ELECTRIC CARS ARE THE CLEANEST—AND GETTING CLEANER FASTER THAN EXPECTED

July 8, 2025

***A new study by the International Council on Clean Transportation (ICCT) estimates that battery electric cars sold today in Europe emit nearly 4 times less greenhouse gases over their lifetime than gasoline cars.***

**Berlin, 9 July** — Europe's electricity mix is getting cleaner, and with it, the climate advantage of electric cars is growing. According to new ICCT research, battery electric cars sold today produce 73% less life-cycle greenhouse gas emissions than their gasoline counterparts — even when factoring in production. That's a 24% improvement over our 2021 estimates. In contrast, other powertrains, including hybrids and plug-in hybrids, show only marginal or no progress in reducing their climate impacts.

The study, a comprehensive life-cycle analysis of all major powertrain types, reinforces earlier findings: only battery electric cars can deliver the large-scale emission cuts needed to address Europe's most polluting transport mode. Passenger cars account for nearly three-quarters of the sector's emissions.

*"Battery electric cars in Europe are getting cleaner faster than we expected and outperform all other technologies, including hybrids and plug-in hybrids,"* said Dr. Marta Negri, Researcher at the ICCT. *"This progress is largely due to the fast deployment of renewable electricity across the continent and the greater energy efficiency of battery electric cars."*

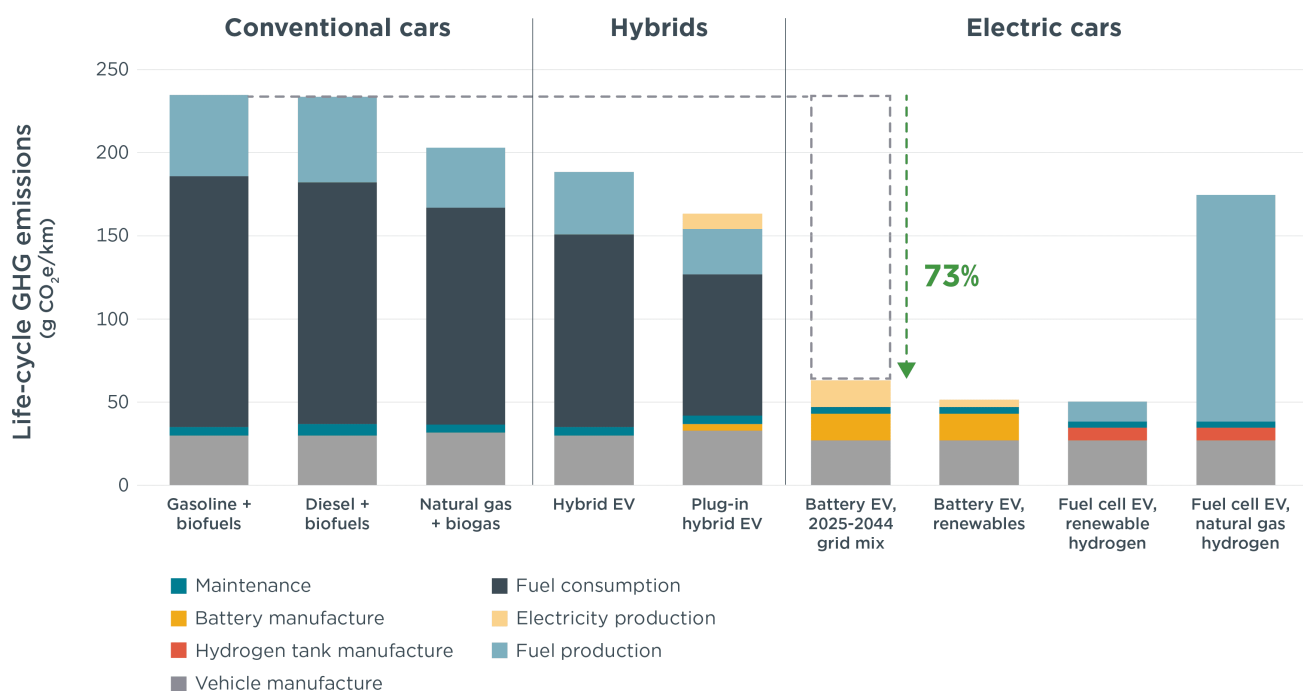
By 2025, renewable energy sources are expected to account for 56% of electricity generation in Europe, an 18-point increase compared with 2020. The EU's Joint Research Centre projects this share will increase further in the next decade, to 86% by 2045. Since cars sold today typically remain on the road for about 20 years, continued improvement of the electricity mix will only widen the climate benefits of battery electric cars. In contrast, the fuels mix used by internal

combustion engine cars will continue to mainly rely on fossil fuels, as the availability and price of alternative fuels remains uncertain.

Other technologies continue to lag behind battery electric vehicles in terms of life-cycle emission reductions. Hybrid and plug-in hybrid cars offer only 20% and 30% lower lifetime emissions than gasoline, respectively. This is also because plug-in hybrids are found to be driven less on electricity than previously assumed. While hybridization offers some benefits, these reductions are relatively small when compared with the emissions savings of battery electric cars—and they are not sufficient to meet the long-term climate targets.

The study also accounts for other powertrain and fuel options such as hydrogen fuel cell electric cars. This pathway can also offer significant emissions reduction (79%) compared with gasoline cars—but only when using renewable electricity-based hydrogen, which is currently not produced and available at scale in Europe. In contrast, fuel cell electric cars run on hydrogen produced from natural gas, which corresponds to almost the entirety of hydrogen available today, allowing only a 26% reduction of life-cycle emissions compared with gasoline cars.

**Life-cycle greenhouse gas emissions of passenger cars sold in the European Union in 2025**



## Addressing misuse of data in the EV debate

Misinformation and selective use of data have generated confusion regarding the climate credentials of electric vehicles. The ICCT analysis provides transparency on the impact of a selection of flawed assumptions, such as not accounting for the development of the grid during the lifetime of vehicles and using non-representative data on vehicle fuel consumption and lifetime.

One common claim is that electric vehicles have higher emissions associated with battery manufacturing. While manufacturing emissions for battery electric cars are roughly 40% higher than for gasoline cars, the ICCT's research shows that this initial "emissions debt" is typically offset after around 17,000 kilometers of driving, usually within the first one to two years of use in Europe.

*"We hope this study brings clarity to the public conversation, so that policymakers and industry leaders can make informed decisions,"* said Dr. Georg Bieker, ICCT Senior Researcher. *"We've recently seen auto industry leaders misrepresenting the emissions math on hybrids. But life-cycle analysis is not a choose-your-own-adventure exercise. Our study accounts for the most representative use cases and is grounded in real-world data. Consumers deserve accurate, science-backed information."*

The ICCT analysis covers the greenhouse gas emissions from vehicle and battery production and recycling, fuel and electricity production, fuel consumption, and maintenance. Its methodology also accounts for the development of the electricity mix along the lifetime of vehicles, as well as real-world usage rather than official test values to estimate fuel and electricity consumption, which is key to assessing plug-in hybrid emissions.

END

**Read this press release in:** [Italian](#) | [German](#) | [Spanish](#) | [French](#)

## Media contact

Susana Irles, *Senior Communications Specialist*,  
[communications@theicct.org](mailto:communications@theicct.org)

## Publication details

Title: Life-cycle greenhouse gas emissions from passenger cars in the European Union: A 2025 update and key factors to consider

Author: Marta Negri and Georg Bieker

Link: [theicct.org/publication/electric-cars-life-cycle-analysis-emissions-europe-jul25](https://theicct.org/publication/electric-cars-life-cycle-analysis-emissions-europe-jul25)

## About the International Council on Clean Transportation (ICCT)

The International Council on Clean Transportation (ICCT) is an independent nonprofit research organization founded to provide exceptional, objective, timely research and technical and scientific analysis to environmental regulators. Our work empowers policymakers and others worldwide to improve the environmental performance of road, marine, and air transportation to benefit public health and mitigate climate change.

Find us at:

[www.theicct.org](http://www.theicct.org)

[Bluesky](#) | [LinkedIn](#) | [YouTube](#)

Keep up with our research by signing up for our [newsletters](#).

---

	DECARBONIZINGSECTOR	POLICIES	REGION
PRINT >	TRANSPORT	<a href="#">Light</a>	<a href="#">ElectrificationEurope</a>
	<a href="#">Life-cycle</a>	<a href="#">vehicles</a>	
	<a href="#">analyses</a>		

# Related Content

---

## REPORT

Life-cycle  
greenhouse gas  
emissions from  
passenger cars  
in the European  
Union: A 2025  
update and key  
factors to  
consider

July 8, 2025