

AUTOMOBILE INDUSTRY

POCKET GUIDE 2021/2022

 \checkmark SUMMARY

c	$EMPLOYMENT \ \rightarrow$	6
Ś	$PRODUCTION \ \rightarrow$	11
\oplus	REGISTRATIONS \rightarrow	20
\neq	$TRADE \ \rightarrow$	31
©	VEHICLES IN USE \rightarrow	42
66	ROAD SAFETY \rightarrow	47
Ð	$\texttt{ENVIRONMENT} \rightarrow$	52
Ŋċ	INNOVATION \rightarrow	59
€	TAXATION \rightarrow	64
\rightarrow	ABOUT ACEA \rightarrow	71

FOREWORD

EVERY YEAR, the European Automobile Manufacturers' Association (ACEA) publishes this Pocket Guide in order to provide a clear and comprehensive overview of one of Europe's most strategic and innovative sectors: the auto industry.

Updated with the latest data on employment, vehicle production and sales, trade flows, the vehicle fleet, road safety, the environment, innovation and taxation, this is the reference guide for anyone interested in automotive issues and related EU policies.

You will surely notice that the 2021-2022 edition is rather special, as our landmark publication got a complete overhaul in line with ACEA's new visual identity.

On a less positive note, the facts and figures in this Pocket Guide also reveal the dramatic impact of COVID-19 on Europe's auto industry.

Almost 13 million motor vehicles were made in the EU in 2020, representing 16.7% of global production, but down 5 million units compared to 2019. Car output plummeted by 23.3% during the crisis year, while EU commercial vehicle production took a 21% hit. Exports of EU-built vehicles also decreased by nearly 15% in 2020, although still generating a €76.3 billion trade surplus for the European Union.

Despite this unprecedented downturn, these statistics also demonstrate the continued importance of the industry as an economic powerhouse that literally keeps Europe on the move, regardless of what happens. As we work towards a new era of mobility and a carbon-neutral Europe, innovation remains at the core of our sector's DNA

With some 3.5 million people directly and indirectly involved in the production of vehicles across the EU, the auto industry accounts for 11.6% of all manufacturing jobs in the region. Looking at the entire automotive ecosystem, the sector provides work to 12.6 million Europeans, or 6.6% of the EU's total workforce.

Apart from ensuring that people and goods can continue to move freely throughout Europe, the 278 million vehicles on our roads are also a major source of government income, annually generating €398.4 billion in taxes for 14 major EU markets alone.

And as we work towards a new era of mobility and a carbon-neutral Europe, innovation remains at the core of our sector's DNA. Investing an impressive €62 billion per year, and responsible for a whopping 33% of total EU spending on innovation, the automotive sector has really solidified its position as Europe's number one investor in R&D. More than ever, we are ready and committed to provide solutions for the challenges of tomorrow.



Eric-Mark Huitema ACEA Director General

KEY FIGURES

EMPLOYMENT Manufacture of motor vehicles (EU)	2.6 million people = 8.6% of EU employment in manufacturing	2018
Total (EU manufacturing,	2.0 million people – 8.0% of EO employment in manufacturing	2010
services and construction)	12.6 million people = 6.6% of total EU employment	2018
PRODUCTION		
Motor vehicles (world)	77.9 million units	2020
Motor vehicles (EU)	13.0 million units = 16.7% of global motor vehicle production	2020
Passenger cars (world)	61.4 million units	2020
Passenger cars (EU)	10.8 million units = 17.6% of global passenger car production	2020
REGISTRATIONS		
Motor vehicles (world)	80.3 million units	2020
Motor vehicles (EU)	11.7 million units = 14.5% of global motor vehicle registrations	2020
Passenger cars (world)	63.4 million units	2020
Passenger cars (EU)	9.9 million units = 15.7% of global passenger car registrations	2020
Petrol (EU)	47.5% market share	2020
Diesel (EU)	28% market share	2020
Electrically-chargeable cars (EU)	10.5% market share	2020
Electrically-chargeable vans (EU)	2.0% market share	2020
Electrically-chargeable trucks (EU)	0.4% market share	2020
Electrically-chargeable buses (EU)	6.1% market share	2020
TRADE		
Motor vehicle exports (extra-EU)	€134.1 billion	2020
Motor vehicle imports (extra-EU)	€57.7 billion	2020
Trade balance (extra-EU)	€76.3 billion	2020
VEHICLES IN USE		
Motor vehicles (EU)	277.8 million units	2019
Passenger cars (EU)	242.7 million units	2019
Motorisation rate (EU)	628 vehicles per 1,000 inhabitants	2019
Average age of cars (EU)	11.5 years	2019
Average age of vans (EU)	11.6 years	2019
Average age of trucks (EU)	13.0 years	2019
Average age of buses (EU)	11.7 years	2019
ROAD SAFETY		
Road fatalities per million inhabitants (EU)	51 people	2019
ENVIRONMENT		
Average CO2 emissions (EU)	108.2g CO2/km	2020
INNOVATION		
Automotive R&D investment (EU)	€62.0 billion	2019
TAXATION		
Fiscal income from motor vehicles (EU14)	€398.4 billion	2020



EMPLOYMENT

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022



EU AUTOMOTIVE SECTOR: DIRECT AND INDIRECT EMPLOYMENT

In thousands / 2018

DIRECT MANUFACTURING	2,571	s)		S	
Motor vehicles	1,120	doj		B Job	
Bodies (coachwork), trailers and semi-trailers	158	2.6 m jobs	SC	2.6 irect	
Parts and accessories	1,293	7	loį p	p	
			turin		
INDIRECT MANUFACTURING	909		fac		
Rubber tyres and tubes, retreading and rebuilding of rubber tyres	122	sq	manufacturing jobs		
Computers and peripheral equipment	60	sdoį m 9.0	5 m		
Electric motors, generators and transformers	245	0.9	с.		
Bearings, gears, gearing and driving elements	232				
Cooling and ventilation equipment	249				S
				S	jol
AUTOMOBILE USE	3,948			jot	Ξ
Sale of motor vehicles	1,411	0		Irinç	2.6 m jobs
Maintenance and repair of motor vehicles	1,323	9 m jobs		actı	Ē
Sale of motor vehicle parts and accessories	641	- 6.	obs	nufa	
Retail sale of automotive fuel in specialised stores	404	с,	Du	ma	
Renting and leasing of motor vehicles	168		m non-manufacturing jobs	0.0 m manufacturing jobs	
			ufac	10	
TRANSPORT	4,483	sdo	nan		
Other passenger land transport	1,393	4.5 m jobs	1-UO		
Freight transport by road	3,090	4.5			
			9.1		
CONSTRUCTION	666	sdc			
Roads and motorways	629	m jobs			
Bridges and tunnels	37	0.7			

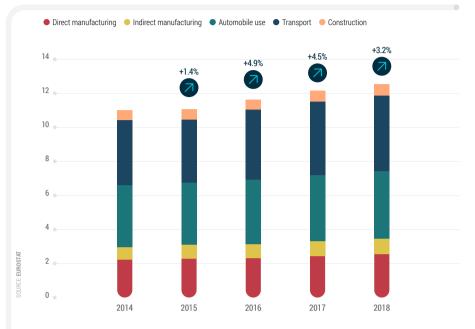
The auto industry provides direct and indirect jobs for 12.6 million Europeans

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EMPLOYMENT IN THE EU AUTOMOTIVE SECTOR

In million jobs / 2014 – 2018



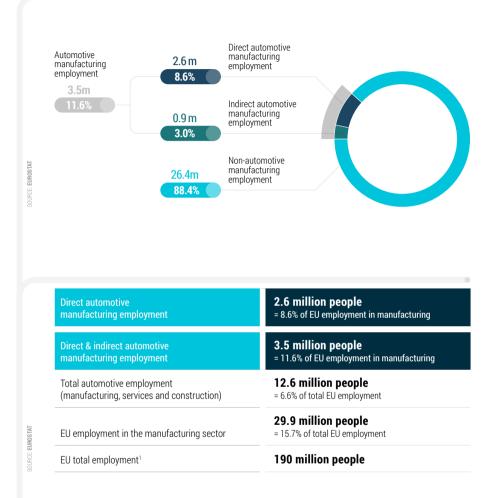
TOTAL	10,953,064	11,106,656	11,652,701	12,182,768	12,576,577	+3.2
Construction	487,741	610,684	578,368	633,423	665,863	+5.1
Transport	3,826,799	3,715,235	4,136,627	4,341,044	4,483,090	+3.3
Automobile use	3,657,867	3,668,769	3,789,494	3,888,807	3,947,518	+1.5
Indirect manufacturing	769,086	829,749	823,201	878,774	908,747	+3.4
Direct manufacturing	2,211,571	2,282,219	2,325,011	2,440,720	2,571,359	+5.4
EU automotive employment	2014	2015	2016	2017	2018	% change 18/17

The automotive sector accounts for 6.6% of all EU jobs

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MANUFACTURING JOBS IN THE EU AUTO SECTOR

% share / 2018



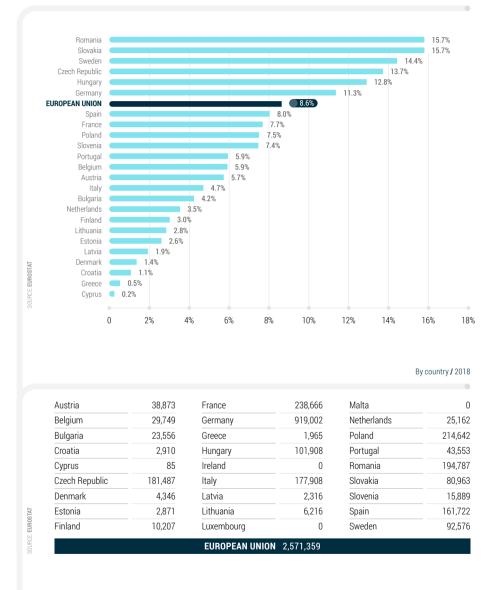
1. Total employment from 20 to 64 years

11.6% of EU manufacturing employment is in the automotive sector

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EU DIRECT AUTOMOTIVE EMPLOYMENT Share of total manufacturing, by country / 2018



The EU automotive sector directly employs 2.6 million people in manufacturing



PRODUCTION

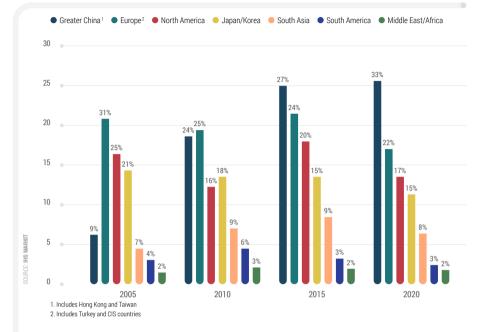
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WORLD VEHICLE PRODUCTION

In million units, % share / 2005 - 2020



In thousand units / 2020

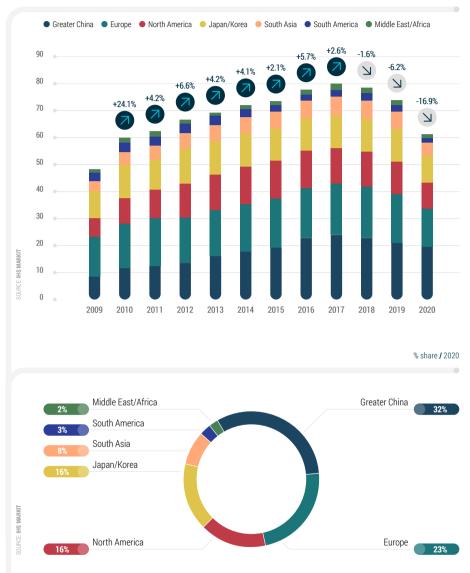
	2020	2019	% change 20/ 19	% share 2020
Europe 1	17,093	21,778	-21.5	21.9
Greater China ²	25,584	26,150	-2.2	32.8
Japan/Korea	11,393	13,322	-14.5	14.6
Middle East/Africa	1,705	2,010	-15.1	2.2
North America	13,486	16,971	-20.5	17.3
South America	2,355	3,417	-31.1	3.0
South Asia	6,326	8,931	-29.2	8.1
WORLD	77,942	92,578	-15.8	100.0

1. Includes Turkey and CIS countries 2. Includes Hong Kong and Taiwan

World vehicle production dropped by almost 16% in 2020

(Ĉ)

WORLD CAR PRODUCTION



In million units, % change / 2009 - 2020

• Almost a quarter of all cars are made in Europe 13

WORLD COMMERCIAL VEHICLE PRODUCTION



18% of all commercial vehicles are manufactured in Europe

In million units, % change / 2009 - 2020

VEHICLE PRODUCTION IN THE EU

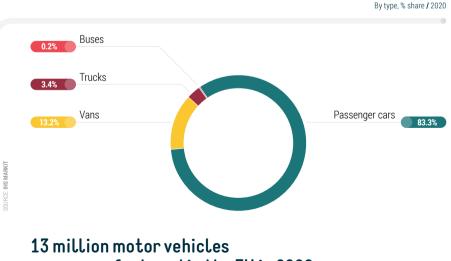
By country / 2020

	Cars	Vans ¹	Trucks ²	Buses ³	TOTAL
Austria	107,476	-	15,815	11	123,302
Belgium	237,261	-	26,166	500	263,927
Czech Republic	1,129,184	-	1,221	5,042	1,135,447
Finland	85,698	-	35	131	85,864
France	861,660	438,379	47,156	2,806	1,350,001
Germany	3,403,981	245,502	146,974	3,764	3,800,221
Hungary	432,603	_	-	464	433,067
Italy	476,288	271,730	48,534	324	796,876
Lithuania	-	-	79	-	79
Netherlands	125,651	_	66,284	638	192,573
Poland	220,855	203,287	20,720	5,672	450,534
Portugal	198,693	69,432	2,784	142	271,051
Romania	437,628	-	-	-	437,628
Slovakia	943,847	-	-	10	943,857
Slovenia	140,878	-	-	10	140,888
Spain	1,751,891	478,917	24,194	1,088	2,256,090
Sweden	256,671	-	36,014	4,053	296,738
EUROPEAN UNION	10,810,265	1,707,247	435,976	24,655	12,978,143

1. Light commercial vehicles up to 3.5t

2. Medium and heavy commercial vehicles over 3.5t

3. Medium and heavy buses over 3.5t



were manufactured in the EU in 2020

15



CAR PRODUCTION IN THE EU

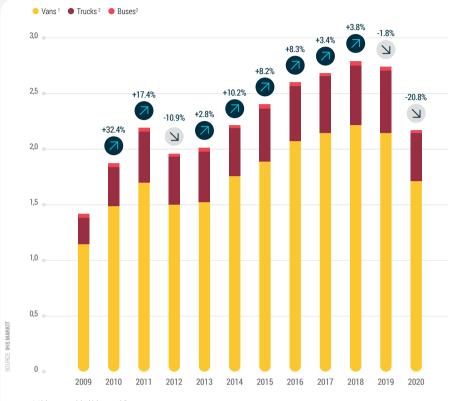
In million units, % change / 2009 - 2020



EU car production plummeted by 23%, or some five million units, in 2020

COMMERCIAL VEHICLE PRODUCTION IN THE EU

In million units, % change / 2009 - 2020



1. Light commercial vehicles up to 3.5t

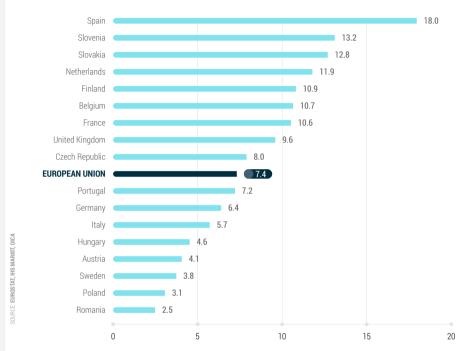
2. Medium and heavy commercial vehicles over 3.5t

3. Medium and heavy buses over 3.5t

Commercial vehicle production in the EU decreased by 20.8% to 2.2 million units in 2020

VEHICLES MADE PER DIRECT AUTOMOTIVE MANUFACTURING EMPLOYEE

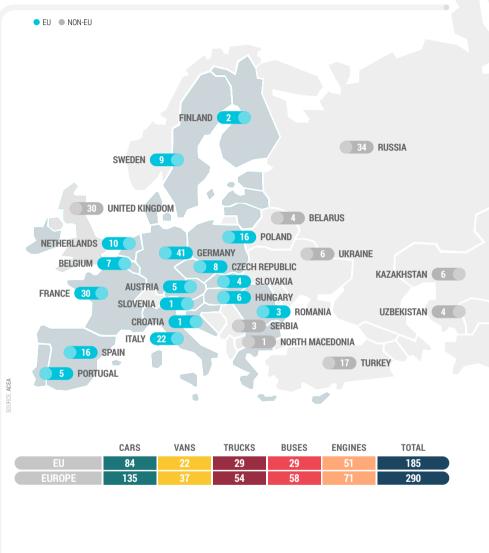
By country / 2018 1



1. Based on direct automotive manufacturing employment, most recent data available

The EU auto industry produces an average of 7.4 vehicles per worker

AUTOMOBILE ASSEMBLY AND ENGINE PRODUCTION PLANTS IN EUROPE



There are 185 automobile assembly and production plants in the EU 2021



REGISTRATIONS

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022



GLOBAL NEW VEHICLE REGISTRATIONS

In thousand units / 2020

	2020	2019	% change 20/19	% share 2020
EUROPE	16,905	21,155	-20.1	21.1
European Union 1	11,659	15,146	-23.0	14.5
EFTA	461	554	-16.9	0.6
United Kingdom	1,968	2,743	-28.3	2.5
Russia	1,689	1,843	-8.4	2.1
Turkey	794	491	+61.5	1.0
Ukraine	96	102	-6.5	0.1
Others: Europe ²	239	274	-12.8	0.3
AMERICA	21,044	25,631	-17.9	26.2
North America	17,627	20,973	-16.0	22.0
of which the United States	15,053	17,644	-14.7	18.7
South America	3,416	4,657	-26.6	4.3
of which Brazil	2,057	2,784	-26.1	2.6
ASIA	39,130	42,553	-8.0	48.7
China	25,527	26,271	-2.8	31.8
Japan	4,600	5,188	-11.3	5.7
India	2,924	3,875	-24.5	3.6
South Korea	1,897	1,785	+6.3	2.4
Others: Asia ³	4,182	5,434	-23.0	5.2
MIDDLE EAST/AFRICA	3,211	3,955	-18.8	4.0
WORLD	80,289	93,293	-13.9	100.0

1. Data for Malta not available 2. Includes Belarus, Bosnia-Herzegovina, Kazakhstan, North Macedonia, Serbia, Uzbekistan

3. Includes Hong Kong, Taiwan and all the other South Asian countries

America Europe 26.2% 21.1% Middle East/Africa Asia 48.7%

Europe accounts for a fifth of global vehicle sales 21

SOURCE: ACEA, IHS MARKIT

SOURCE: ACEA, IHS MARKIT

% share / 2020

GLOBAL NEW CAR REGISTRATIONS

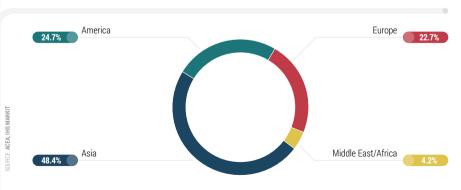
In thousand units / 2020

	2000	0010	0/ . l 00/10	% . L 0000
	2020	2019	% change 20/19	% share 2020
EUROPE	14,382	18,112	-20.6	22.7
EUROPEAN UNION 1	9,943	13,029	-23.7	15.7
EFTA	388	466	-16.7	0.6
United Kingdom	1,631	2,311	-29.4	2.6
Russia	1,505	1,638	-8.1	2.4
Turkey	610	387	+57.5	1.0
Ukraine	86	90	-4.8	0.1
Others: Europe ²	219	191	+15.0	0.3
AMERICA	15,674	19,578	-19.9	24.7
North America 3	13,167	16,038	-17.9	20.8
of which the United States	11,233	13,464	-16.6	17.7
South America	2,507	3,539	-29.2	4.0
of which Brazil	1,615	2,262	-28.6	2.5
ASIA	30,664	33,959	-9.7	48.4
China	19,734	21,163	-6.8	31.1
Japan	3,814	4,296	-11.2	6.0
India	2,491	3,072	-18.9	3.9
South Korea	1,624	1,489	+9.0	2.6
Others: Asia 4	3,001	3,939	-23.8	4.7
MIDDLE EAST/AFRICA	2,685	3,248	-17.3	4.2
WORLD	63,405	74,897	-15.3	100.0

1. Data for Malta not available 2. Includes Belarus, Bosnia-Herzegovina, Kazakhstan, North Macedonia, Serbia, Uzbekistan

3. Based on production type
 4. Includes Hong Kong, Taiwan and all the other South Asian countries

% share / 2020



63 million cars were sold worldwide in 2020

SOURCE: ACEA, IHS MARKIT

NEW COMMERCIAL VEHICLE' REGISTRATIONS

In thousand units / 2020

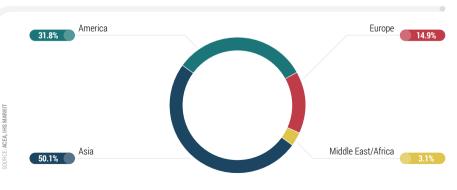
	2020	2019	% change 20/19	% share 2020
			, j	
EUROPE	2,523	3,043	-17.1	14.9
European Union ²	1,716	2,117	-18.9	10.2
EFTA	73	89	-17.7	0.4
United Kingdom	337	432	-22.0	2.0
Russia	184	205	-10.4	1.1
Turkey	184	104	+76.3	1.1
Ukraine	10	12	-18.9	0.1
Others: Europe ³	20	84	-76.2	0.1
AMERICA	5,369	6,053	-11.3	31.8
North America 4	4,460	4,935	-9.6	26.4
of which the United States	3,820	4,180	-8.6	22.6
South America	909	1,118	-18.7	5.4
of which Brazil	442	522	-15.4	2.6
ASIA	8,466	8,593	-1.5	50.1
China	5,793	5,107	+13.4	34.3
Japan	786	892	-11.9	4.7
India	433	802	-46.1	2.6
South Korea	274	296	-7.5	1.6
Others: Asia ⁵	1,181	1,495	-21.0	7.0
MIDDLE EAST/AFRICA	526	707	-25.7	3.1
WORLD	16,884	18,396	-8.2	100.0

1. Includes light, medium and heavy commercial vehicles, and buses 2. Data for Malta not available

3. Includes Belarus, Bosnia-Herzegovina, Kazakhstan, North Macedonia, Serbia, Uzbekistan 4. Based on production type

5. Includes Hong Kong, Taiwan and all the other South Asian countries

% share / 2020



16.9 million vans, trucks and buses were registered globally in 2020

SOURCE: ACEA, IHS MARKIT

VEHICLE REGISTRATIONS IN THE EU

By country / 2020

	Cars	Vans ¹	Trucks ³	Buses ⁴	TOTAL
Austria	248,740	36,545	5,676	872	291,833
Belgium	431,491	71,313	7,516	787	511,107
Bulgaria	22,368	5,060	2,055	180	29,663
Croatia	36,005	6,797	895	106	43,803
Cyprus	10,061	1,577	99	244	11,981
Czech Republic	202,971	17,141	7,355	1,367	228,834
Denmark	198,130	31,122	3,727	269	233,248
Estonia	18,750	3,289	493	224	22,756
Finland	96,415	12,842	3,430	284	112,971
France	1,650,118	401,154	42,699	6,050	2,100,021
Germany	2,917,678	267,832	74,779	6,460	3,266,749
Greece	80,977	6,865	561	307	88,710
Hungary	128,021	22,043	3,275	629	153,968
Ireland	88,324	21,732	1,936	130	112,122
Italy	1,381,496	159,709	20,303	3,162	1,564,670
Latvia	13,864	2,120	714	75	16,773
Lithuania	40,232	2,859	4,188	315	47,594
Luxembourg	45,189	4,420	991	214	50,814
Netherlands	358,330	60,433	10,426	643	429,832
Poland	428,347	59,649	20,671	1,486	510,153
Portugal	145,417	27,578	3,585	412	176,992
Romania	126,351	13,730	4,112	819	145,012
Slovakia	76,305	6,371	1,943	290	84,909
Slovenia	53,694	8,033	1,323	58	63,108
Spain	851,211	158,198	19,245	2,090	1,030,744
Sweden	292,024	31,015	5,502	1,674	330,215
EUROPEAN UNION	9,942,509	1,439,427	247,499	29,147	11,658,582
Iceland	9,369	1,001	205	15	10,590
Norway	141,412	32,110	5,993	1,370	180,885
Switzerland	236,828	28,158	3,579	640	269,205
EFTA	387,609	61,269	9,777	2,025	460,680
United Kingdom	1,631,064	292,657	39,312	4,623	1,967,656
EU + EFTA + UK	11,961,182	1,793,353	296,588	35,795	14,086,918

1. Data for Malta not available 2. Light commercial vehicles up to 3.5t 3. Medium and heavy commercial vehicles over 3.5t 4. Buses and coaches over 3.5t

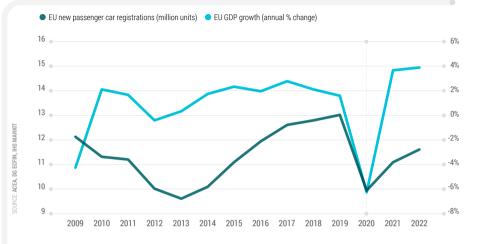
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The EU represents a market of 11.7 million motor vehicles per year

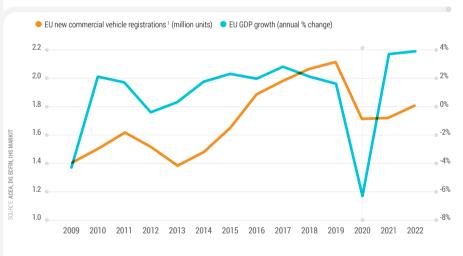
NEW CAR REGISTRATIONS AND GDP IN THE EU

2009 - 2022

2009 - 2022



NEW COMMERCIAL VEHICLE REGISTRATIONS AND GDP IN THE EU



1. Includes light, medium and heavy commercial vehicles, and buses and coaches

• Vehicle sales mirror economic growth and decline 25

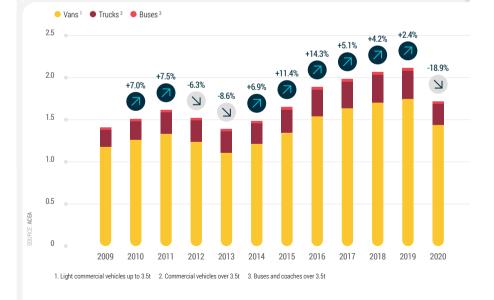
NEW CAR REGISTRATIONS IN THE EU

In million units, % change / 2009 – 2020



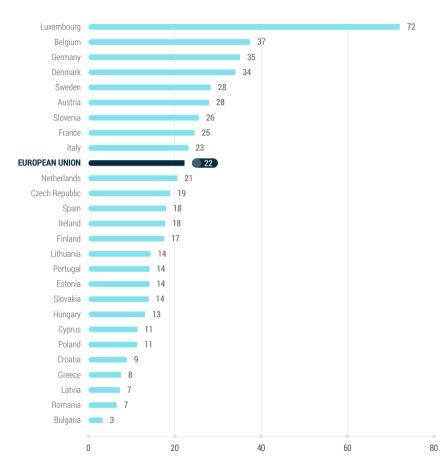
NEW COMMERCIAL VEHICLE REGISTRATIONS IN THE EU

In million units, % change / 2009 - 2020



NEW CARS PER 1,000 INHABITANTS

By country, in units / 2020



22 new cars were registered per 1,000 inhabitants in the EU in 2020

In million units, % share / 2009 – 2020 ● Small (A+B) ● Lower medium (C) ● Upper medium (D) ● Luxury (E+F) ● MPV¹ ● SUV² 40% 2% 18% SOURCE: IHS MARKIT 26%

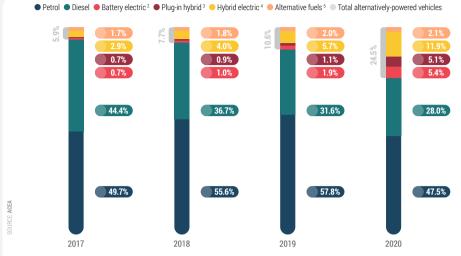
NEW CARS IN THE EU BY SEGMENT

1. Multi-purpose vehicles 2. Sport utility vehicles

Small and lower medium cars account for 44% of total EU car sales

NEW CARS IN THE EU BY FUEL TYPE

Market share / 2017 - 2020



 1. Data for Bulgaria and Malta not available
 2. Includes fuel electric vehicles
 3. Includes extended range electric vehicle

 4. Includes full and mild hybrids
 5. Includes natural gas, LPG and ethanol vehicles
 3.

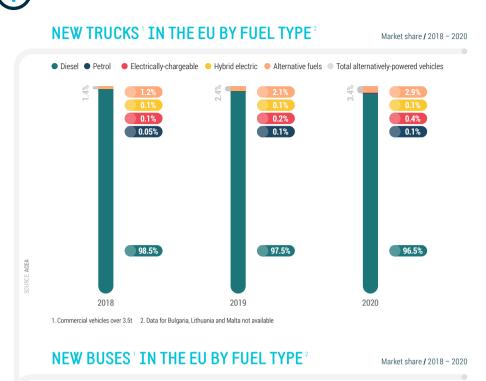
NEW VANS¹ IN THE EU BY FUEL TYPE²

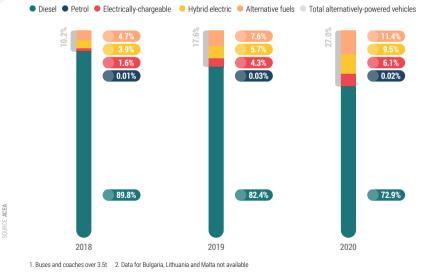
Market share / 2018 - 2020



A quarter of all new cars in the EU are alternatively-powered

29





96.5% of new trucks in the EU are fuelled by diesel 30



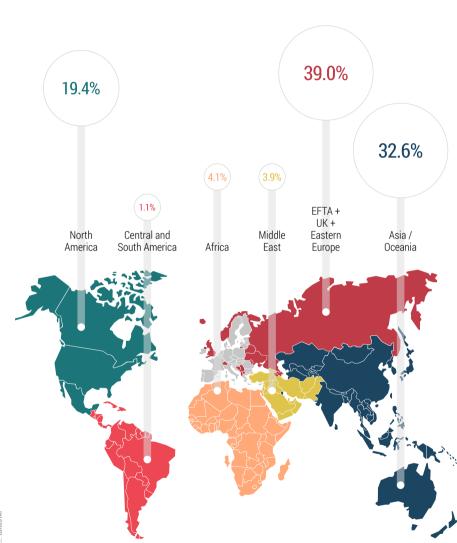
TRADE

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022



MAIN DESTINATIONS FOR EU VEHICLE EXPORTS

Value market share / 2020



SOURCE: EUROSTAT

The automotive industry puts the EU firmly on the global map

EU VEHICLE TRADE

By type, in million € / 2020

			Trucks &	
Trade in value	Cars ¹	Vans ²	buses ³	TOTAL
2020				
Imports	51,337	4,108	2,300	57,746
Exports	121,244	6,226	6,620	134,090
Trade balance	69,907	2,118	4,319	76,344
2019				
Imports	63,103	5,413	2,768	71,284
Exports	140,317	7,586	8,603	156,506
Trade balance	77,214	2,172	5,835	85,221
% change 20/19				
Imports	-18.6%	-24.1%	-16.9%	-19.0%
Exports	-13.6%	-17.9%	-23.1%	-14.3%
Trade balance	-9.5%	-2.5%	-26.0%	-10.4%

1. Passenger cars

SOURCE: EUROSTAT

2. Commercial vehicles up to 5t

3. Commercial vehicles over 5t, including buses and coaches

By type, in units / 2020

.

Trade in volume	Cars ¹	Vans ²	Trucks & buses ³	TOTAL
2020				
Imports	3,052,178	266,072	392,921	3,711,171
Exports	5,189,538	423,792	189,760	5,803,090
2019				
Imports	3,974,072	378,495	269,491	4,622,058
Exports	6,156,553	583,646	242,055	6,982,254
% change 20/19				
Imports	-23.2%	-29.7%	+45.8%	-19.7%
Exports	-15.7%	-27.4%	-21.6%	-16.9%

1. Passenger cars

2. Commercial vehicles up to 5t

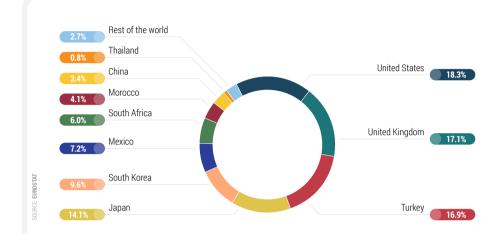
3. Commercial vehicles over 5t, including buses and coaches

The auto industry generates an annual trade surplus of €76 billion for the EU

33

COUNTRIES OF ORIGIN OF EU VEHICLE IMPORTS

Value market share / 2020



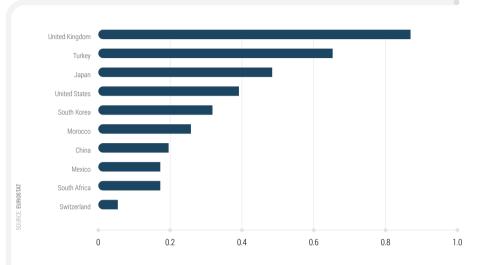
By value, in million € / 2020

WORLD	49,354	57.320	63,226	63,788	71.284	57,746	-19.0	100.0
Thailand	674	858	863	711	783	443	-43.4	0.8
China	167	229	405	479	864	1,963	+127.3	3.4
Morocco	1,394	1,623	1,974	2,357	2,542	2,362	-7.1	4.1
South Africa	2,582	3,332	3,586	4,422	5,669	3,465	-38.9	6.0
Mexico	1,650	2,153	4,622	5,214	5,006	4,130	-17.5	7.2
South Korea	3,084	3,452	5,200	5,804	6,576	5,518	-16.1	9.6
Japan	6,539	7,857	8,348	8,808	10,737	8,118	-24.4	14.
Turkey	8,054	10,489	12,237	12,693	13,022	9,776	-24.9	16.9
United Kingdom	15,534	16,780	16,097	15,127	14,134	9,864	-30.2	17.
United States	6,944	7,246	6,529	5,550	9,510	10,542	+10.9	18.3
	2015	2016	2017	2018	2019	2020	% change 20/19	% shar 2020

The EU imported almost €58 billion worth of vehicles in 2020

MAIN COUNTRIES OF ORIGIN OF EU VEHICLE IMPORTS

In million units / 2020



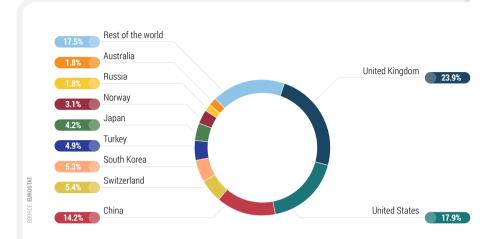
In units / 2020

	2015	2016	2017	2018	2019	2020	% change 20/19	% share 2020
United Kingdom	966,380	1,225,657	952,151	917,531	957,690	872,146	-8.9	23.5
Turkey	684,481	860,478	974,269	970,942	929,834	654,612	-29.6	17.6
Japan	414,494	491,779	553,948	583,057	676,024	485,371	-28.2	13.1
United States	245,303	258,883	248,460	265,827	355,767	393,728	+10.7	10.6
South Korea	276,599	295,551	412,882	436,693	443,441	318,917	-28.1	8.6
Morocco	170,794	201,189	246,664	293,959	306,518	258,393	-15.7	7.0
China	81,152	73,661	113,658	157,428	154,400	196,833	+27.5	5.3
Mexico	121,963	134,875	230,755	265,680	222,463	173,307	-22.1	4.7
South Africa	134,056	174,743	172,252	210,845	267,755	172,632	-35.5	4.7
Switzerland	48,388	67,714	71,508	73,085	65,099	54,168	-16.8	1.5
WORLD	3,440,441	4,123,915	4,318,539	4,462,922	4,622,058	3,711,171	-19.7	100.0



DESTINATIONS FOR EU VEHICLE EXPORTS

Value market share / 2020



By value, in million €/2020

WORLD	164,135	159,947	162,297	155,933	156,506	134,090	-14.3	100.0
Australia	4,060	4,239	4,284	4,233	3,451	2,459	-28.8	1.8
Russia	3,070	2,627	2,982	3,205	3,614	2,480	-31.4	1.8
Norway	3,867	4,010	4,539	4,343	4,712	4,103	-12.9	3.1
Japan	5,839	6,445	7,187	7,215	7,095	5,676	-20.0	4.2
Turkey	7,928	7,980	6,992	4,415	2,949	6,531	+121.4	4.9
South Korea	6,521	5,561	6,034	6,290	5,927	7,069	+19.3	5.3
Switzerland	8,275	7,807	7,969	7,652	8,088	7,282	-10.0	5.4
China	13,406	15,742	17,844	18,927	19,369	19,063	-1.6	14.2
United States	34,981	30,473	31,297	29,659	29,195	23,964	-17.9	17.9
United Kingdom	45,972	46,251	42,295	39,992	41,741	32,010	-23.3	23.9
	2015	2016	2017	2018	2019	2020	% change 20/19	% share 2020

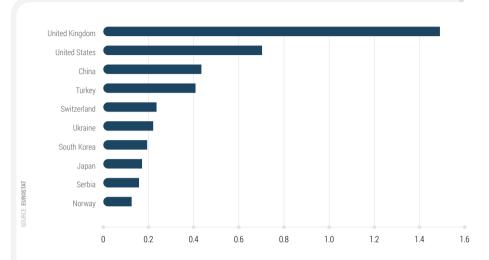
SOURCE: EUROSTAT

• EU vehicle exports brought in €134 billion in 2020 36



MAIN DESTINATIONS FOR EU VEHICLE EXPORTS

In million units / 2020



In units / 2020

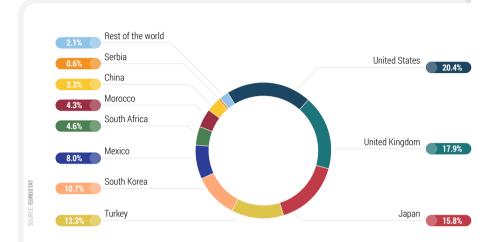
	2015	2016	2017	2018	2019	2020	% change 20/19	% share 2020
United Kingdom	2,409,801	2,606,695	2,304,480	2,156,781	2,165,213	1,491,160	-31.1	25.7
United States	1,095,129	969,083	965,929	933,491	827,621	702,642	-15.1	12.1
China	349,250	400,997	472,592	473,201	412,045	434,382	+5.4	7.5
Turkey	540,415	541,079	486,403	282,166	199,699	408,676	+104.6	7.0
Switzerland	322,072	304, 267	294,394	283,628	312,822	233,430	-25.4	4.0
Ukraine	44,136	72,540	112,552	109,279	178,997	220,011	+22.9	3.8
South Korea	207,884	160,014	169,021	169,828	162,494	193,439	+19.0	3.3
Japan	224,450	217,963	240,441	241,704	227,843	171,258	-24.8	3.0
Serbia	97,478	129,506	131,193	155,510	150,697	157,650	+4.6	2.7
Norway	157,056	157,747	164,611	208,439	165,597	125,440	-24.2	2.2
WORLD	7,748,866	7,639,058	7,448,598	7,241,268	6,982,254	5,803,090	-16.9	100.0

SOURCE: EUROSTAT

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COUNTRIES OF ORIGIN OF EU CAR IMPORTS

Value market share / 2020



By value, in million € / 2020

	2015	2016	2017	2018	2019	2020	% change 20/19	% share 2020
United States	6,915	7,202	6,380	5,450	9,435	10,452	+10.8	20.4
United Kingdom	14,890	15,885	15,214	14,205	13,291	9,182	-30.9	17.9
Japan	6,520	7,817	8,319	8,786	10,715	8,094	-24.5	15.8
Turkey	4,271	5,672	7,900	8,147	8,283	6,331	-23.6	12.3
South Korea	3,067	3,439	5,186	5,789	6,549	5,510	-15.9	10.7
Mexico	1,641	2,141	4,600	5,179	4,962	4,098	-17.4	8.0
South Africa	2,233	2,808	2,930	3,631	4,556	2,366	-48.1	4.6
Могоссо	1,233	1,428	1,773	2,124	2,308	2,191	-5.1	4.3
China	80	103	329	393	717	1,709	+138.3	3.3
Serbia	1,035	999	844	655	440	306	-30.5	0.6
WORLD	43,419	49,681	55,708	56,095	63,103	51,337	-18.6	100.0

The United States accounts for the highest import value of cars, with a 20.4% share



United Kingdom Turkey Japan United States South Korea Morocco China Mexico South Africa SOURCE: EUROSTAT Switzerland 0 0.1 0.2 0.3 0.4 0.5 0.6

MAIN COUNTRIES OF ORIGIN OF EU CAR IMPORTS In million units / 2020

In units / 2020

	2015	2016	2017	2018	2019	2020	% change 20/19	% share 2020
United Kingdom	934,643	1,170,174	901,298	840,140	700,546	503,282	-28.2	16.5
Turkey	451,459	569,756	718,163	714,895	701,111	494,149	-29.5	16.2
Japan	413,289	489,473	552,017	581,385	674,328	483,626	-28.3	15.8
United States	241,598	253,205	239,786	256,411	349,091	386,877	+10.8	12.7
South Korea	275,559	294,623	411,952	435,814	441,870	318,479	-27.9	10.4
Morocco	152,247	179,959	222,965	266,276	280,731	240,479	-14.3	7.9
China	73,346	60,954	99,854	133,280	133,465	170,244	+27.6	5.6
Mexico	121,034	133,601	228,668	262,147	218,077	170,153	-22.0	5.6
South Africa	114,974	148,521	140,966	172,410	213,198	124,335	-41.7	4.1
Switzerland	42,232	60,965	64,113	65,877	58,514	48,059	-17.9	1.6
WORLD	3,068,995	3,659,905	3,865,048	3,961,764	3,974,072	3,052,178	-23.2	100.0

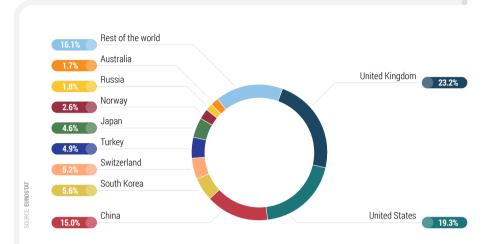
SOURCE: EUROSTAT

The EU imported more than 3 million cars in 2020 39



DESTINATIONS FOR EU CAR EXPORTS

Value market share / 2020



By value, in million € / 2020

	2016	2016	2017	2018	2019	2020	% change 20/19	% share 2020
United Kingdom	41,287	41,039	37,854	35,516	36,487	28,097	-23.0	23.2
United States	34,309	29,915	30,664	29,010	28,727	23,374	-18.6	19.3
China	13,218	15,522	17,526	18,338	18,632	18,202	-2.3	15.0
South Korea	6,197	5,027	5,508	5,899	5,679	6,830	+20.3	5.6
Switzerland	7,248	6,872	6,973	6,601	6,990	6,286	-10.1	5.2
Turkey	6,809	7,082	5,990	3,875	2,581	5,969	+131.3	4.9
Japan	5,798	6,425	7,170	7,189	7,062	5,635	-20.2	4.6
Norway	2,975	2,995	3,472	3,297	3,196	3,114	-2.6	2.6
Russia	2,846	2,347	2,499	2,780	3,145	2,147	-31.7	1.8
Australia	3,685	3,690	3,586	3,284	2,806	2,074	-26.1	1.7
WORLD	149,407	144,651	147,426	141,008	140,317	121,244	-13.6	100.0

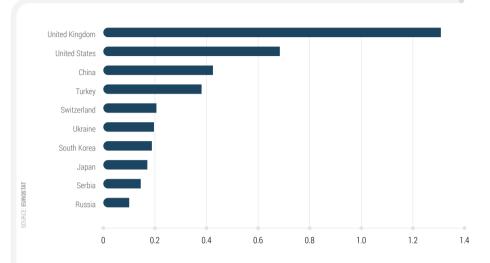
SOURCE: EUROSTAT

• EU car exports are worth €121.2 billion



MAIN DESTINATIONS FOR EU CAR EXPORTS

In million units / 2020



In units / 2020

	2015	2016	2017	2018	2019	2020	% change 20/19	% share 2020
United Kingdom	2,187,284	2,229,987	2,077,829	1,922,448	1,866,399	1,310,061	-29.8	25.2
United States	1,081,301	958,389	952,965	919,264	819,658	684,428	-16.5	13.2
China	346,519	397,420	467,684	465,177	402,884	424,124	+5.3	8.2
Turkey	480,360	490,463	430,025	258,328	184,401	381,278	+106.8	7.3
Switzerland	293,566	271,546	265,898	252,451	249,756	205,901	-17.6	4.0
Ukraine	27,255	50,530	88,856	86,074	149,399	196,267	+31.4	3.8
South Korea	204,141	154,043	163,182	164,978	155,776	187,739	+20.5	3.6
Japan	223,374	217,801	240,269	241,395	227,588	170,804	-25.0	3.3
Serbia	88,394	115,560	117,438	137,971	130,400	145,246	+11.4	2.8
Russia	150,800	116,291	124,949	152,608	146,411	100,028	-31.7	1.9
WORLD	7,074,989	6,811,656	6,768,781	6,444,153	6,156,553	5,189,538	-15.7	100.0

SOURCE: EUROSTAT

• **5.2 million cars were exported by the EU in 2020** 41



VEHICLES IN USE

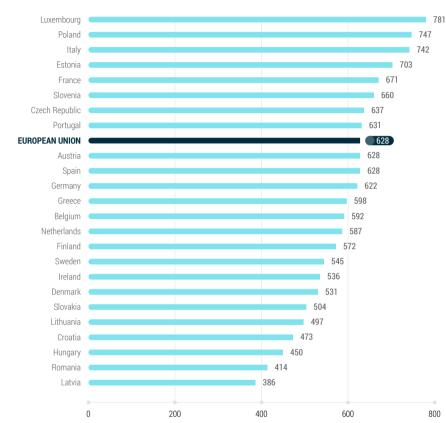
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MOTORISATION RATES IN THE EU

Vehicles per 1,000 inhabitants / 2019

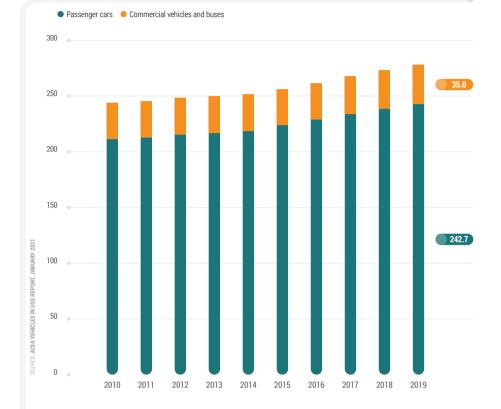


The EU has 628 motor vehicles per 1,000 inhabitants

URCE: ACEA VEHICLES IN USE REPORT, JANUARY 2021

EU VEHICLE FLEET: SIZE AND DISTRIBUTION

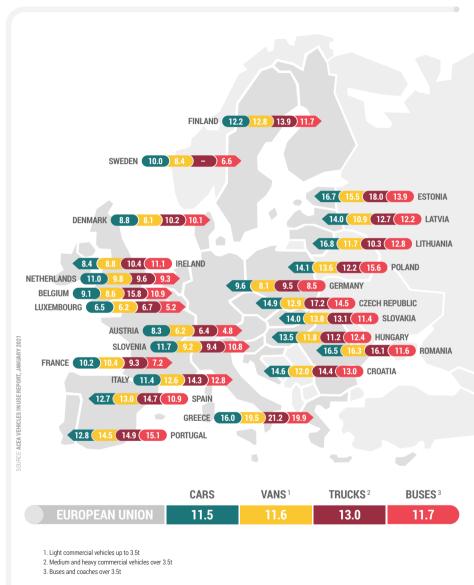
In million units / 2010 - 2019



The EU fleet counts almost 278 million motor vehicles

AVERAGE AGE OF THE EU VEHICLE FLEET

By country, in years / 2019

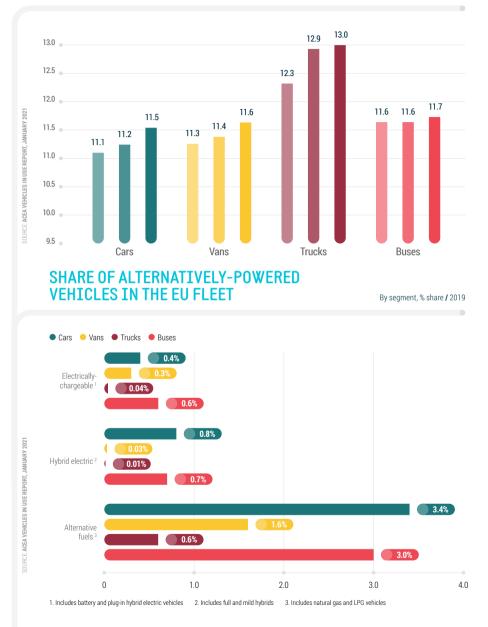


Cars in the EU are on average 11.5 years old



AVERAGE AGE OF THE EU FLEET

By vehicle type, in years / 2017 - 2019



0.4% of all passenger cars on EU roads are electrically-chargeable

•



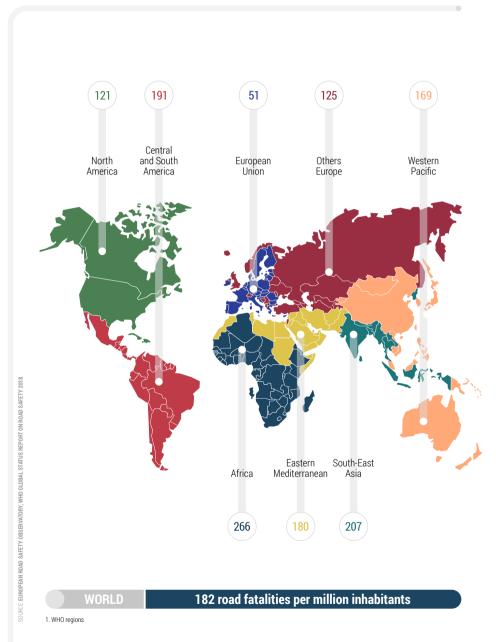
ROAD SAFETY

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022





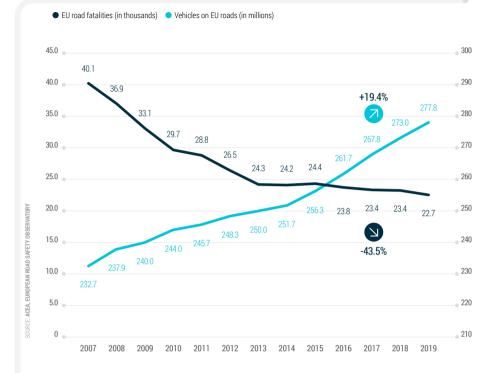
ROAD FATALITIES PER MILLION INHABITANTS



EU roads are by far the safest in the world

NUMBER OF MOTOR VEHICLES AND ROAD FATALITIES IN THE EU

2007 - 2019



While there are 45 million more vehicles on EU roads, fatalities have fallen by -43.5% since 2007

•

ROAD FATALITIES PER MILLION INHABITANTS

By country / 2010, 2019



Average road fatalities per million Europeans dropped by 25% since 2010

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EUROPEAN ROAD SAFETY OBSERVATORY

By country / 2019 FINLAND (-12.6%) 209 SWEDEN (-31.8%) 221 52 (-22.4%) ESTONIA 132 (-10.8%) LATVIA DENMARK +13.7%) 199 184 (+6.4%) LITHUANIA 141 (+0.7%) IRELAND 3,059 -6.6% GERMANY NETHERLANDS -2.5%) 661 POLAND (+1.6%) 2,909 BELGIUM +2.6% 620 617 (-6.2%) CZECH REPUBLIC LUXEMBOURG (-38.9%) 22 245 (+7.0%) SLOVAKIA AUSTRIA (+1.7%) 416 602 (-4.9%) HUNGARY SLOVENIA +12.1%) 102 1,864 (-0.2%) ROMANIA FRANCE -0.1% 3,244 CROATIA -6.3% 297 628 (+2.8%) BULGARIA 1,724 (-4.5%) SPAIN 699 (-0.1%) GREECE ITALY (-6.1%) 3,130

ROAD FATALITIES IN THE EU

614 (-9.0%) PORTUGAL

EUROPEAN UNION

• Road fatalities declined by 3% in the EU in 2020 51

MALTA -11.1%) 16

CYPRUS (+6.1%) 52

22,653

-3.0%



N ENVIRONMENT

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022

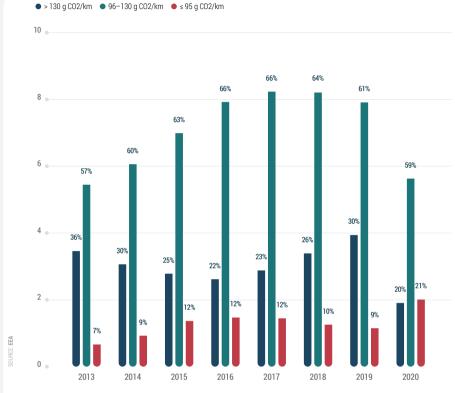




The average new car in the EU emits 108.2g CO2/km 53

NEW CARS BY EMISSIONS CLASSES IN THE EU

In million units, % share / 2013 - 20201



1. Provisional figures

80% of all new cars sold in the EU emit less than 130g CO2/km



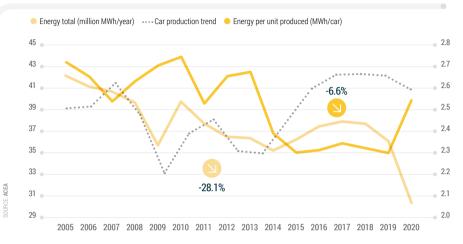
CO2 EMISSIONS OF NEW CARS IN THE EU In g CO2/km, % change / 2010 - 2020¹



1. Provisional figures

CO2 emissions from new cars are down by 22.4% since 2010

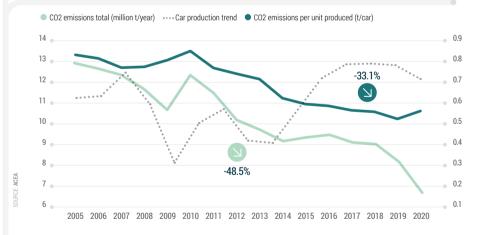
ENERGY CONSUMPTION DURING CAR PRODUCTION



CO2 EMISSIONS FROM CAR PRODUCTION

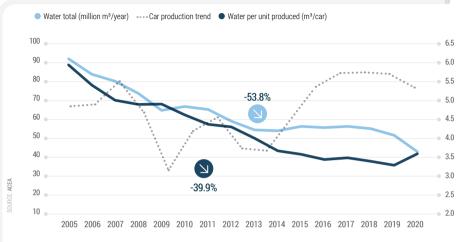
2005 - 2020

2005 - 2020



CO2 emissions from car production have dropped by 48.5% since 2005

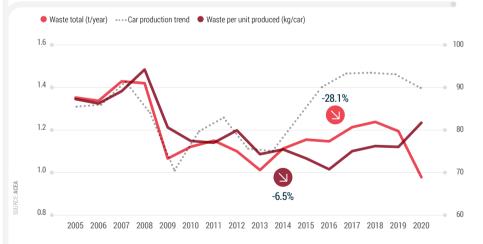
WATER USED IN CAR PRODUCTION



WASTE FROM CAR PRODUCTION

2005 - 2020

2005 - 2020



1. Excluding scrap metal and demolition waste

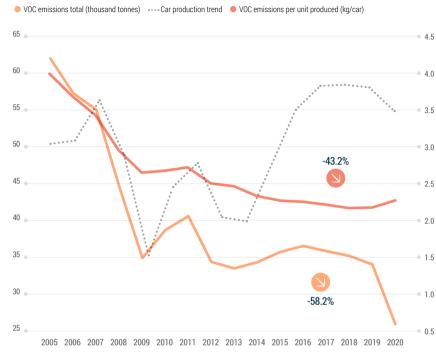
Water consumption per car produced has been reduced by 53.8% since 2005

•

VOC' EMISSIONS FROM CAR PRODUCTION

2005 - 2020

58



1. Volatile organic compounds

Volatile organic compounds (VOC) are organic solvents mainly emitted from paint shops. The graph shows VOC emissions per car produced and the absolute emissions of all car manufacturers combined. With new technologies, such as the replacement of solvent-based paints with solvent-free, water-based equivalents manufactures have been able to reduce unit emissions by 43.2% over the last 15 years.

EU manufacturers have dramatically reduced the environmental impact of car production over the last 15 years

SOURCE: ACEA



INNOVATION

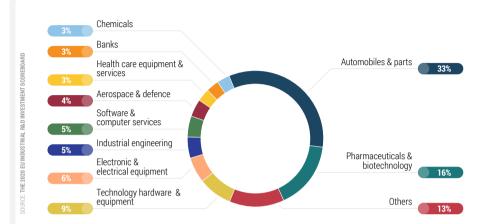
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R&D SHARE OF SECTORS IN THE EU

% share / 2019



EU R&D INVESTMENT IN THE TOP 10 INDUSTRIAL SECTORS

In billion € / 2019

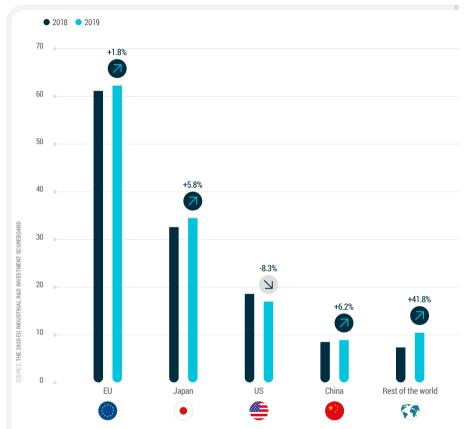
Automobiles & parts	62.
Pharmaceuticals & biotechnology	30.
Technology hardware & equipment	15
Electronic & electrical equipment	11.
Industrial engineering	9
Software & computer services	9
Aerospace & defence	
Health care equipment & services	5
Banks	5
Chemicals	5

The automotive sector is the EU's number one investor in R&D, responsible for 33% of total spending

IRCETTHE 2020 EU INDUSTRIAL R&D INVESTMENT SCOREBOARD

R&D INVESTMENT IN THE AUTOMOBILE SECTOR BY WORLD REGION

In billion €, % change



EU investment in automotive R&D stands at €62 billion annually

•

PATENT APPLICATIONS RELATED TO SELF-DRIVING VEHICLES

● Europe¹ ● US ● Japan ● South Korea ● China ● Rest of the world 6,000 6.4% 5,000 4,000 11.5% 3,000 30.1% 2,000 SOURCE: EPO (EUROPEAN PATENT OFFICE) 1,000 33.3% 0 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

1. European Patent Convention (EPC)

Europe leads the world in patents for self-driving vehicles

Number of patents, % share / 2009 - 2018

R&D INVESTMENT BY INDUSTRY AND WORLD REGION

THE 2020 EU INDUSTRIAL R&D INVESTMENT SCOREBOARD

● EU ● Japan ● US ● China ● Rest of the world Pharmaceuticals & biotechnology Software & computer services Technology hardware & equipment Other industries Automobiles & parts Electronic & electrical equipment Industrial engineering Chemicals Aerospace & defence General industrials Construction & materials 0 30 60 90 120 150 180

The EU is by far the world's largest investor in automotive R&D

63

In billion € / 2019



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TAXATION

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022



ELECTRIC VEHICLES: TAX BENEFITS AND PURCHASE INCENTIVES

		TAX BENEFITS		INCENTIVES
	Acquisition	Ownership	Company car	
Austria	\bigcirc	\checkmark	\checkmark	\bigcirc
Belgium	\bigcirc	\checkmark	\checkmark	\bigotimes
Bulgaria	\mathbf{x}	\checkmark	\otimes	\otimes
Croatia	\checkmark	\checkmark	\bigotimes	\checkmark
Cyprus	\bigcirc		\otimes	\otimes
Czech Republic	\checkmark	×	\checkmark	\checkmark
Denmark	\checkmark		\otimes	\otimes
Estonia	\mathbf{x}	×	\otimes	\checkmark
Finland	\checkmark		\checkmark	\checkmark
France	\checkmark	×	\checkmark	\checkmark
Germany	\checkmark		\checkmark	\checkmark
Greece	\checkmark		~	
Hungary	\checkmark		~	
Ireland	\otimes		~	
Italy	\otimes		\bigotimes	
Latvia	\checkmark	\checkmark	S	\otimes
Lithuania	\otimes	\mathbf{X}	\otimes	8
Luxembourg	\otimes		S	
Malta	\bigcirc		\otimes	8
Netherlands	\bigcirc		S	S
Poland	 Image: A start of the start of	×	8	8
Portugal		 V 	 O 	 Image: A start of the start of
Romania	×	 Image: A start of the start of	8	 Image: A start of the start of
Slovakia	 	 Image: A start of the start of	8	×
Slovenia	 ✓ 	×	8	 Image: A start of the start of
Spain	 Image: A start of the start of	 	$\overline{\diamond}$	 Image: A start of the start of
Sweden	×		8	 Image: A start of the start of

Purchase incentives for electric vehicles are available in 18 EU countries

SOURCE: ACEA TAX GUIDE 2021

€

SOURCE: ACEA TAX GUIDE 2021

CO2-BASED VEHICLE TAXATION

		TAX MEASURES	3
	Acquisition	Ownership	Company car
Austria	e	\checkmark	
Belgium	\bigcirc	\checkmark	
Bulgaria	\mathbf{x}	\checkmark	\mathbf{X}
🖲 Croatia	\bigcirc	\mathbf{X}	\bigotimes
🗧 Cyprus	\bigcirc	\checkmark	×
Czech Republic	S	×	×
Denmark	\bigotimes	\checkmark	\checkmark
Estonia	\bigotimes	×	×
Finland	S		×
France			
Germany	$\mathbf{\otimes}$		\mathbf{X}
Greece	Image: A start of the start		×
Hungary	Image: A start of the start	×	×
Ireland	Image: A start of the start		
Italy			×
Latvia	8	×	×
Lithuania	\bigotimes	×	\otimes
Luxembourg	\bigotimes		
Malta			×
Netherlands	Image: A start of the start	 Image: A start of the start of	 Image: A start of the start of
Poland	\bigotimes	×	×
Portugal		 Image: A start of the start of	8
Romania	\mathbf{X}	×	×
Slovakia	8	×	×
Slovenia	 O 	×	×
Spain		×	
Sweden	8	 	×

21 EU member states apply CO2-based taxation

FISCAL INCOME FROM VEHICLES IN MAJOR EUROPEAN MARKETS

	A ustria	🕒 Belgium	ermany	Denmark	Spain	∔ Finland	() France
	€bn	€bn	€bn	DKK bn	€bn	€bn	€bn
Purchase or transfer	2020	2019	2019	2018	2019	2019	2019
 VAT on vehicle sales servicing, repair & parts 	3.0	8.0	34.6	-	5.0	1.7	20.3
2. Sales & registration taxes	0.5	0.5	-	20.7	0.5	0.9	2.3
3. Annual ownership taxes	2.7	1.7	9.4	9.9	2.9	1.1	0.9
4. Fuels & lubricants	5.6	8.7	41.9	17.5	21.5	3.8	43.1
5. Others							
Driving license fees	-	0.0	0.2	-	0.1	-	-
Insurance taxes	0.4	1.0	5.4	1.5	-	0.4	5.3
Tolls	2.3	0.7	8.2	0.5	-	-	13.0
Customs duties	-	-	0.2	-	-	-	-
Other taxes	0.4	0.8	-	-	0.8	-	1.6
TOTAL (national currencies)	14.9	21.4	99.9	50.1	30.8	7.9	86.4
TOTAL (EURO) ²	14.9	21.4	99.9	6.7	30.8	7.9	86.4

	Greece	() Ireland	() Italy	e Netherlands	Portugal	🛟 Sweden
Purchase or transfer	€ bn 2020	€ bn 2019	€bn 2019	€ bn 2019	€ bn 2019	SEK bn 2020
1. VAT on vehicle sales servicing, repair & parts	0.3	0.7	18.9	1.2	4.5	25.0
2. Sales & registration taxes	0.3	1.0	1.9	2.2	0.7	-
3. Annual ownership taxes	1.3	0.9	6.7	4.3	0.7	15.4
4. Fuels & lubricants	5.5	3.5	37.3	10.4	3.5	43.1
5. Others						
Driving license fees	-	0.0	-	0.3	-	-
Insurance taxes	0.5	0.1	3.9	1.2	-	2.9
Tolls	-	-	2.2	0.2	0.2	2.8
Customs duties	-	-	-	-	-	-
Other taxes	0.2	-	5.4	1.8	-	-
TOTAL (national currencies)	8.1	6.2	76.3	21.5	9.6	89.2
TOTAL (EURO) ²	8.1	6.2	76.3	21.5	9.6	8.7

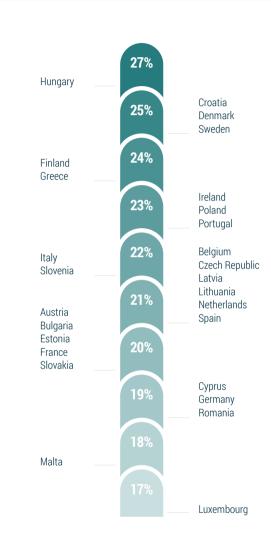
GRAND TOTAL = €398.4 billion

1. Latest available data; only countries for which sourced data is available are listed

2. Euro foreign exchange reference rates at 30 March 2021; source: ECB

Motor vehicles account for €398.4 billion in taxes in major European markets

SHARE OF VAT IN NET PRICE OF CARS

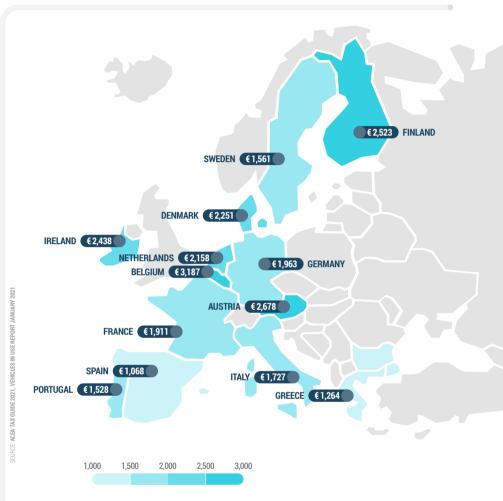


Automobiles provide a vital source of government revenue

SOURCE: ACEA TAX GUIDE 2021

AVERAGE ANNUAL TAX REVENUE PER VEHICLE IN MAJOR EU MARKETS

€



1. Per country estimates based on total number of vehicles in the fleet

Collecting €3,187 per vehicle annually, Belgium has the highest tax revenue

69

EXCISE DUTIES ON UNLEADED PETROL

 Unleaded petrol ... EU minimum rates unleaded petrol 900 800 700 600 500 400 300 200 100 0 France Ireland Belgium Estonia Slovakia Croatia Spain Austria Lithuania Cyprus Poland Finland Greece Malta Luxembourg Latvia Czech Republic Slovenia Bulgaria Sweden Romania Vetherlands Italy Portugal Denmark Hungary Germany

EXCISE DUTIES ON DIESEL

• Diesel ... EU minimum rates diesel 700 600 500 400 300 200 100 0 Belgium France Ireland Finland Portugal Slovenia Sweden Denmark Greece Croatia Cyprus Estonia Latvia -uxembourg Austria Slovakia Romania Bulgaria Poland ltaly Jetherlands Germany Malta Spain Lithuania Czech Republic Hungary

Hungary has the lowest excise duties on fuels - both petrol and diesel - in the EU



SOURCE: ACEA TAX GUIDE 2021

SOURCE: ACEA TAX GUIDE 2021

In €/1,000 litres

In €/1.000 litres



ABOUT ACEA

THE AUTOMOBILE INDUSTRY POCKET GUIDE 2021/2022

DRIVING MOBILITY FOR EUROPE

The European Automobile Manufacturers' Association, or ACEA, unites Europe's 15 major car, truck, van and bus makers.



We are the voice of the auto industry: a technological world leader and the backbone of the EU economy. Our members keep Europe on the move, providing diverse solutions for moving people and goods from A to B.

Together, we are progressing on the road to zero-emission and zero-fatality transport. We are addressing major technology shifts and the changing mobility needs of Europeans.

DRIVING MOBILITY FOR EUROPE

ACEA is working towards a new era of mobility, where all Europeans can access affordable transport solutions that are:

- Green & Clean
- Smart & Efficient
- Safe & Reliable

Our aim is to drive Europe's mobility transformation – while at the same time ensuring that the auto industry remains a strong **Global & Competitive** player.

What ACEA does

ACEA acts as one with common industry positions that also reflect the overarching interests of European citizens, transport users and operators, and auto industry workers.

We bring our collective expertise to policy makers, sharing a wealth of factual information to enable well-informed decisions.

We foster a societal debate around mobility, and are open to working with all interested parties to advance the common aim of clean, smart and safe mobility.



ACEA European Automobile Manufacturers' Association

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