

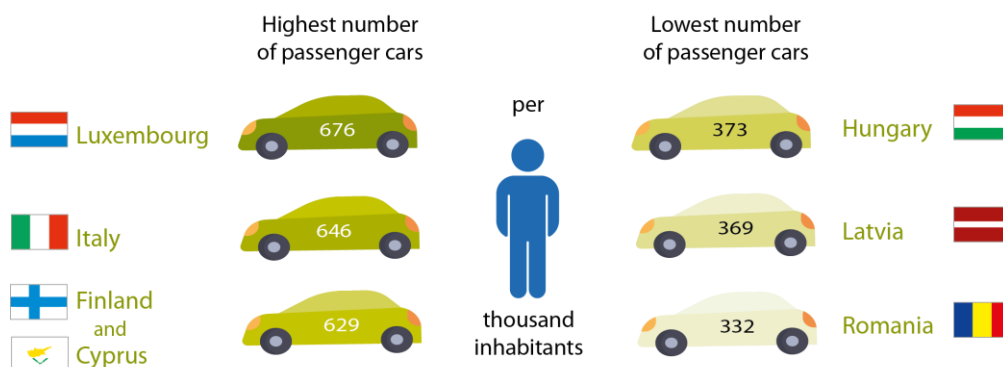
## Passenger cars in the EU

Data extracted in April 2020  
Planned article update: June 2021

### Highlights

In 2018, Luxembourg had the highest number of passenger cars per inhabitant in the EU, with 676 cars per 1000 inhabitants.

### EU Member States with the highest and lowest number of passenger cars per thousand inhabitants, 2018



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This article describes developments in [passenger car](#) stocks and new registrations in the [European Union \(EU\)](#), focusing in particular on passenger cars powered by '[alternative fuels](#)'.

### Full article

Overview

## Overview

Despite an increase over the last years, passenger cars powered by alternative fuels, including hybrid cars, only made up a small share of the fleet of passenger cars in the EU in 2018. This is reflected by the share of cars powered by alternative fuels being low among the newly registered passenger cars.

Overall, the passenger car fleet in almost all of the [EU Member States](#) has grown over the last five years. The highest number of cars per inhabitant was recorded in Luxembourg, followed by Italy, Cyprus and Finland. In 2018, Poland had by far the highest share of passenger cars older than 20 years, followed by Estonia and Finland.

Preferences with regard to petrol or diesel powered passenger cars vary across the EU Member States; amongst the Member States for which recent data are available, cars with petrol powered engines make up the majority of registered passenger cars in most countries; diesel powered passenger cars dominate in only ten Member States. When looking at petrol and diesel engines together, medium sized engines dominated the passenger car fleet in most EU Member States; however, in Hungary and Malta the smallest engines dominated.

## New passenger car registrations

The preferences for whether a new passenger car should be powered by a petrol or diesel engine vary across the EU Member States. For the 21 Member States for which detailed data are available, 17 registered a higher petrol share; this is a change from the past, when a majority of Member States recorded a higher diesel share.

## New passenger cars by type of engine fuel, 2018

	Total	Petrol	Diesel	Alternative energy
Belgium	557 487	347 284	202 272	7 931
Bulgaria	250 489	:	:	
Czechia	259 525	:	:	
Denmark	218 478	141 320	72 475	:
Germany	3 435 778	2 142 700	1 111 130	181 948
Estonia	26 299	19 686	6 527	86
Ireland	128 549	48 840	70 732	8 977
Greece (*)	130 227	:	:	
Spain	1 424 758	838 217	552 588	33 953
France	2 138 600	1 277 064	827 499	34 037
Croatia	140 644	40 964	97 276	2 404
Italy	1 944 312	:	:	169 133
Cyprus	40 683	22 546	18 100	37
Latvia	17 185	10 240	6 807	138
Lithuania	169 143	55 574	110 072	3 497
Luxembourg	52 811	:	:	
Hungary	295 431	175 108	105 595	14 728
Malta	19 479	12 528	6 503	448
Netherlands (*)	414 309	331 609	72 267	10 433
Austria	341 068	192 503	141 159	7 406
Poland (*)	1 336 787	719 727	500 112	116 948
Portugal	305 710	97 697	124 059	83 954
Romania	130 921	71 873	53 239	5 809
Slovenia	74 518	48 240	23 877	2 401
Slovakia	169 898	:	:	
Finland	120 505	89 497	29 071	1 937
Sweden	365 513	215 360	138 666	11 487
United Kingdom (*)	2 341 505	1 589 618	736 172	15 715
Liechtenstein	1 849	1 152	644	53
Norway	173 887	80 512	35 264	58 111
Switzerland	300 900	203 400	91 300	6 200
North Macedonia	33 072	:	:	:
Turkey	526 235	179 131	320 452	26 652
Kosovo	9 842	2 126	7 714	2

Note: (:) not available.

(\*) 2017 data instead of 2018

(\*) Great Britain only.

Source: Eurostat (online data codes: road\_eqr\_carmot and road\_eqr\_carpda)

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Table 1: New passenger cars by type of engine fuel, 2018 - Source:

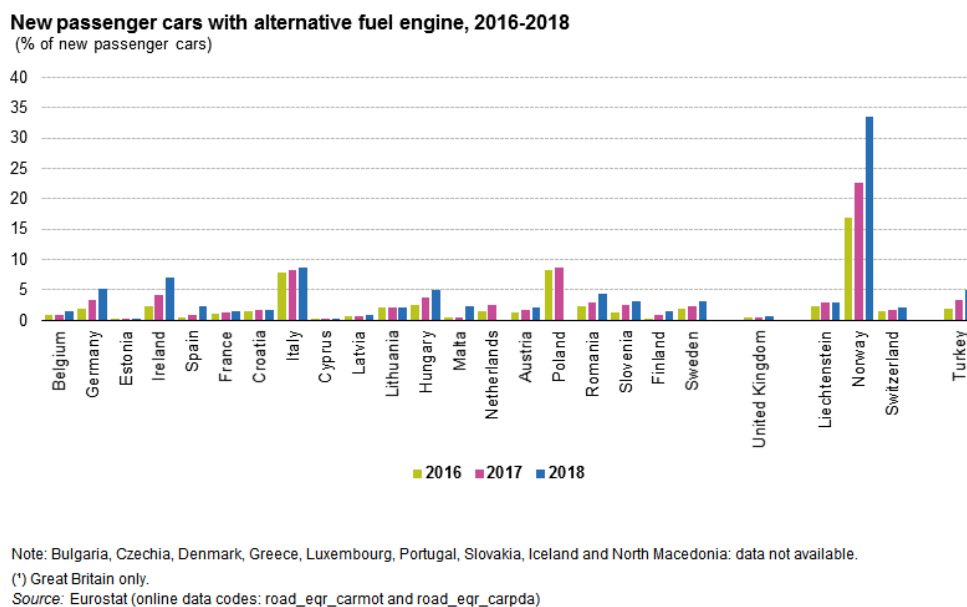
Eurostat ([road\\_eqr\\_carmot](#)) and ([road\\_eqr\\_carpda](#))

In 2018, the highest shares of petrol powered cars among the new registrations were noted in the Netherlands (80.0 %), Estonia (74.9 %) and Finland (74.3 %), with high shares also recorded in

Denmark and Slovenia (both 64.7 %), Malta (64.3 %), Germany (62.4 %), Belgium (62.3 %), France (59.7 %), Latvia (59.6 %), Hungary (59.3 %), Sweden (58.9 %), Spain (58.8 %), Austria (56.4 %), Cyprus (55.4 %), Romania (54.9 %) and Poland (53.8%).

By contrast, the highest shares of diesel cars among the new passenger cars were recorded in Croatia (69.2 %), Lithuania (65.1 %) and Ireland (55.0 %).

In the EU Member States and [EFTA](#) countries for which recent data are available, an increase in the share of new registrations of passenger cars powered by alternative fuels (including hybrids) can generally be observed in the period from 2016 to 2018, although at a low level in most countries. In 2018, the highest share by far of alternative fuels in new registrations could be seen in Poland (8.75 %, 2017 data) and Italy (8.70 %) and, from the EFTA countries, in Norway (33.4 %). Thereafter followed Ireland (7.0 %), Germany (5.3 %) and Hungary with a share of 5.0 % of passenger cars with alternative fuels amongst the new registrations. However, for seven Member States, registrations of new passenger cars with alternative fuels was less than 2 % of the total registrations in 2018.



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Figure 1: New passenger cars with alternative fuel engine, 2016-2018 (% of new passenger cars) -

Source: Eurostat ([road\\_eqr\\_carmot](#)) and ([road\\_eqr\\_carpda](#))

The share of registrations of new passenger cars powered by alternative fuel fluctuates in several countries; indeed, as can be seen from Figure 1, the share of cars with alternative fuels in the total new

registrations increased from 2016 to 2018 in several countries. One of the reasons behind this is the variety of government incentives to stimulate the share of cars with lower emissions, and the timing of when these incentives are introduced. These incentives include e.g. tax reductions, subsidies or specific privileges such as access to lanes reserved for public transport, free parking, etc. Another main influence is the number and variety of passenger car models with alternative fuel engines offered, as well as the prices of such models.

## Highest number of passenger cars per inhabitant in Luxembourg

In 2018, the highest number of registered passenger cars was observed in Germany with 47 million cars. Thereafter followed Italy (39 million cars) and France (32 million cars). Over the five year period from 2014 to 2018, there was strong growth in the number of registered passenger cars in several Member States. The highest growth over this period was recorded in Romania (31 %), followed by Czechia, Slovakia and Lithuania (each 19 %), Hungary and Portugal (both 17 %) and Cyprus (15 %).

## Passenger cars

(number)

	2014	2015	2016	2017	2018
Belgium	5 555 499	5 623 579	5 712 061	5 785 447	5 853 782
Bulgaria	3 013 863	3 162 037	3 143 568	2 770 615	2 773 325
Czechia	4 833 386	5 115 316	5 307 808	5 538 222	5 747 913
Denmark	2 329 578	2 390 823	2 465 538	2 530 047	2 594 469
Germany	44 403 000	45 071 000	45 803 560	46 474 594	47 095 784
Estonia	652 950	676 596	703 151	725 944	746 464
Ireland	2 018 310	2 060 170	2 102 720	2 142 390	2 182 920
Greece	5 110 873	5 107 620	5 160 056	5 235 928	:
Spain	22 029 512	22 355 549	22 876 830	23 500 401	24 074 151
France	32 531 000	32 326 000	32 076 000	32 005 986	32 034 000
Croatia	1 474 000	1 499 802	1 552 904	1 596 087	1 666 413
Italy	37 080 753	37 351 233	37 876 138	:	39 018 170
Cyprus	478 492	487 692	508 284	526 617	550 695
Latvia	657 799	679 048	664 177	689 536	707 841
Lithuania	1 205 668	1 244 063	1 298 737	1 356 987	1 430 520
Luxembourg	372 827	381 103	390 935	403 282	415 145
Hungary	3 107 695	3 196 856	3 313 206	3 471 997	3 641 823
Malta	265 950	275 380	282 921	291 664	300 140
Netherlands	7 979 083	8 100 864	8 222 974	8 373 244	8 530 584
Austria	4 694 921	4 748 048	4 821 557	4 898 578	4 978 852
Poland	20 003 863	20 723 423	21 675 388	22 503 579	23 429 016
Portugal	4 699 645	4 722 963	4 850 229	5 059 472	5 282 970
Romania	4 907 564	5 155 059	5 472 423	5 998 194	6 452 536
Slovenia	1 068 362	1 078 737	1 096 523	1 117 935	1 143 150
Slovakia	1 949 100	2 034 574	2 121 774	2 223 117	2 321 608
Finland	3 172 735	3 234 860	3 322 672	3 398 937	3 470 507
Sweden	4 584 711	4 668 262	4 767 262	4 844 823	4 869 979
United Kingdom (*)	:	30 250 294	30 850 440	31 200 182	31 517 597
Liechtenstein	28 470	28 802	29 241	29 675	29 949
Norway	2 555 443	2 610 000	2 662 910	2 719 396	2 751 949
Switzerland	4 384 000	4 458 000	4 524 000	4 570 800	4 602 700
North Macedonia	371 449	383 833	394 934	403 316	415 062
Turkey	9 857 915	10 589 337	11 317 998	12 035 978	12 398 190
Kosovo	:	:	:	168 759	256 880

Note: (:) not available.

(\*) Great Britain only.

Source: Eurostat (online data code: road\_eqs\_carmot)

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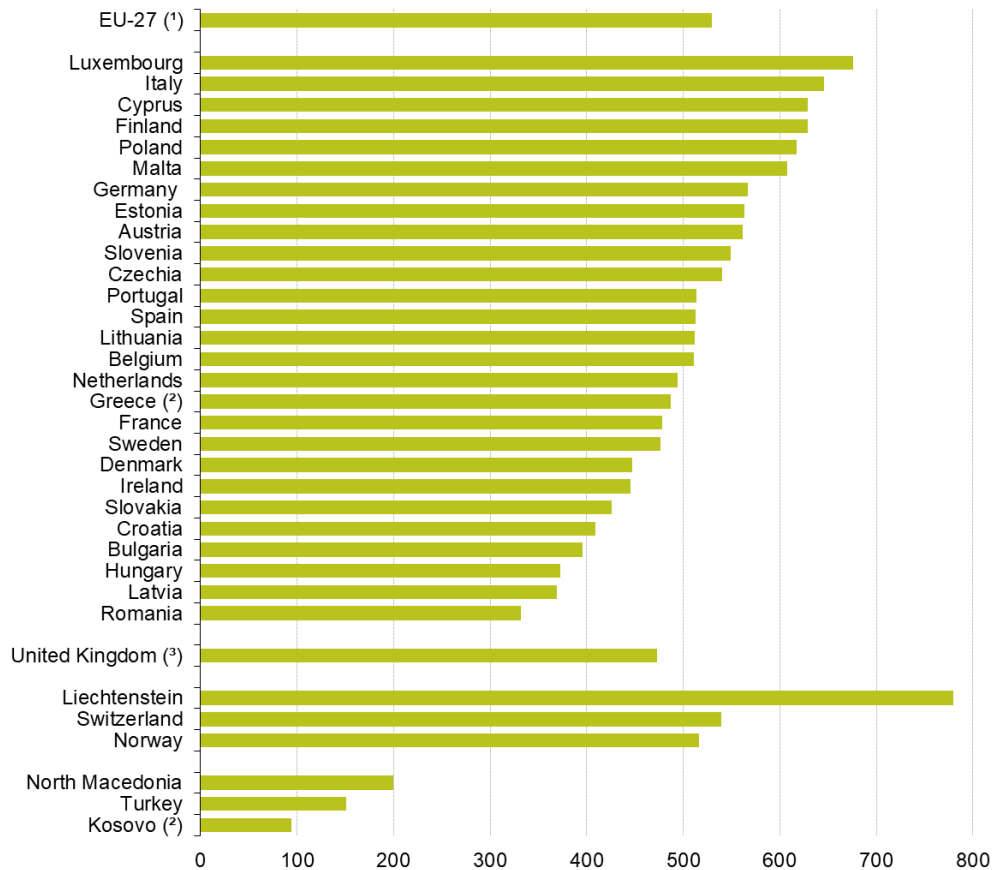
Table 2: Passenger cars (number) - Source: Eurostat ([road\\_eqs\\_carmot](#))

Only two Member States recorded a decline in the number of registered passenger cars over the period observed: France experienced a fall of 1.5 % and Bulgaria 8.0 % from 2014 to 2018.

Amongst the EU Member States with the highest 'motorisation rates', i.e. passenger cars per 1000 inhabitants, there are several smaller countries. Luxembourg (676 passenger cars per 1000 inhabitants) heads the list; however, this figure may be influenced by cross-border workers (i.e. not

inhabitants) using company cars registered in the country. In second place follows Italy with 646 cars per 1000 inhabitants. Other countries with a high motorisation rate include Cyprus and Finland (both with 629 cars), Poland (617 cars) and Malta (608 cars).

### Number of passenger cars per 1000 inhabitants, 2018



<sup>(1)</sup> estimated data

<sup>(2)</sup> 2017 data instead of 2018

<sup>(3)</sup> Great Britain only.

Source: Eurostat (online data code: road\_eqs\_carhab)

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Figure 2: Number of passenger cars per thousand inhabitants, 2018 - Source:

Eurostat ([road\\_eqs\\_carhab](#))

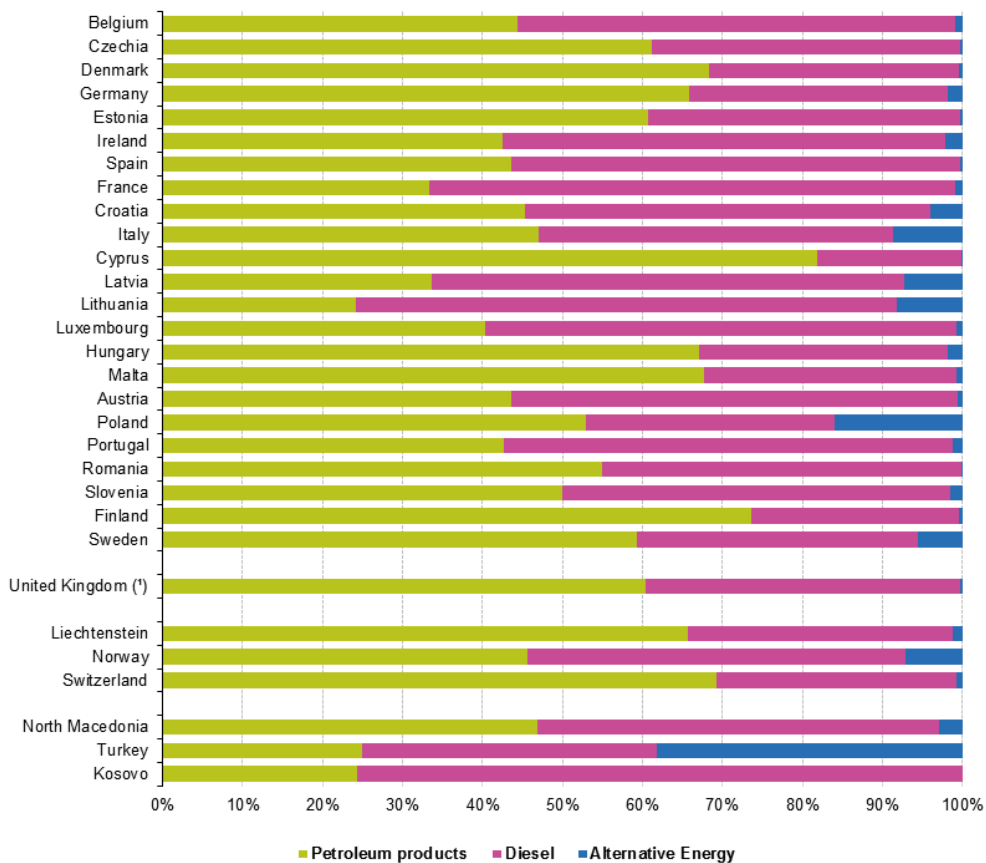
At the other end of the scale, a particularly low motorisation rate is recorded in Romania (332 cars), despite a growth in the number of registered cars of 31 % over the period 2014-2018. The motorisation rate in the two EU candidate countries for which data are available is substantially lower than in the Member States. The smallest value, 94 cars per thousand inhabitants, was recorded in Kosovo.

# Small petrol engines more common than medium-sized and large engines

## Passenger cars with small petrol engines more common than medium-sized and large engines in the majority of Member States

In 13 of the 23 Member States for which information is available, the majority of passenger cars were powered by a petrol engine in 2018. The ten Member States where there were more diesel cars than petrol cars were Lithuania, France, Latvia, Luxembourg, Spain, Portugal, Austria, Ireland, Belgium and Croatia (see Figure 3).

**Passenger cars by type of engine fuel, 2018**  
(% of all passenger cars)



Note: Bulgaria, Greece, Netherlands and Slovakia: data not available.

(\*) Great Britain only.

Source: Eurostat (online data code: road\_eqs\_carpda)



Figure 3: Passenger cars by type of engine fuel, 2018 (% of all passenger cars) - Source:

Eurostat ([road\\_eqs\\_carpda](#))

In Malta, more than half of all passenger cars had small petrol engines in 2018, with the share of small petrol-driven passenger cars reaching 55.6 % of the total, followed by Hungary with 43.8 %. In Cyprus, medium sized petrol engines powered 42.2 % of the passenger cars. Large petrol engines can be found in passenger cars in particular in Estonia (11.0 % of all passenger cars) and Finland (9.1 %) and in the EFTA countries Lichtenstein (17.9 %) and Switzerland (12.2 %).

#### Petrol-driven passenger cars by size of engine, 2018

	Petrol engine			Share of all passenger cars (%)		
	≤ 1399 cm3	1400 cm3 - 1999 cm3	≥ 2000 cm3	≤ 1399 cm3	1400 cm3 - 1999 cm3	≥ 2000 cm3
Belgium <sup>(1)</sup>	1 727 840	709 367	162 842	29.5	12.1	2.8
Bulgaria	:	:	:	:	:	:
Czechia	2 261 556	1 099 667	153 280	39.3	19.1	2.7
Denmark	:	:	:	:	:	:
Germany	16 631 674	11 831 793	2 561 489	35.3	25.1	5.4
Estonia	106 398	264 292	82 268	14.3	35.4	11.0
Ireland	667 760	243 070	11 840	30.6	11.1	0.5
Greece	:	:	:	:	:	:
Spain	5 942 508	3 889 940	664 957	24.7	16.2	2.8
France	8 241 000	2 097 000	336 000	25.7	6.5	1.0
Croatia	551 343	189 208	15 652	33.1	11.4	0.9
Italy	8 239 377	9 732 884	350 920	21.1	24.9	0.9
Cyprus	204 697	232 340	13 645	37.2	42.2	2.5
Latvia	57 021	150 064	31 122	8.1	21.2	4.4
Lithuania	:	:	:	:	:	:
Luxembourg	:	:	:	:	:	:
Hungary	1 595 559	783 346	66 563	43.8	21.5	1.8
Malta	166 874	31 933	4 528	55.6	10.6	1.5
Netherlands	:	:	:	:	:	:
Austria	1 431 363	573 955	168 007	28.7	11.5	3.4
Poland	7 322 742	4 588 823	502 981	31.3	19.6	2.1
Portugal	1 891 859	316 712	44 446	35.8	6.0	0.8
Romania	2 238 762	1 238 163	72 043	34.7	19.2	1.1
Slovenia	383 978	176 855	10 392	33.6	15.5	0.9
Slovakia	:	:	:	:	:	:
Finland	803 741	1 435 472	317 213	23.2	41.4	9.1
Sweden	1 583 227	966 438	339 796	32.5	19.8	7.0
United Kingdom <sup>(2)</sup>	10 721 969	6 920 514	1 326 260	34.0	22.0	4.2
Liechtenstein	6 495	7 824	5 368	21.7	26.1	17.9
Norway	419 235	677 272	159 624	15.2	24.6	5.8
Switzerland	1 227 700	1 399 500	562 600	26.7	30.4	12.2
North Macedonia	:	:	:	:	:	:
Turkey <sup>(3)</sup>	840 105	2 206 391	47 310	6.8	17.8	0.4
Kosovo	24 858	33 069	4 292	9.7	12.9	1.7

(1) In the category 'Up to 1399' there are 26 850 passenger cars included of engine unknown

(2) Great Britain only.

(3) In the category 'Up to 1399' there are 151 739 passenger cars included of engine unknown

Source: Eurostat (online data code: road\_eqs\_carmot)

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Table 3: Petrol-driven passenger cars by size of engine, 2018 (% of all passenger cars) - Source:

Eurostat ([road\\_eqs\\_carmot](#))

Overall, passenger cars with small engines usually use petrol as fuel; there are relatively few passenger cars with small diesel engines in the EU. Medium sized engines dominate amongst the diesel-powered passenger cars in all Member States for which data are available. This is particularly the case for countries with the highest overall share of diesel powered passenger cars, France and Spain, as well as in the other countries where more than half of the passenger cars were diesel cars, most notably Ireland and Austria.

#### Diesel-driven passenger cars by size of engine, 2018

	Diesel engine			Share of all passenger cars (%)		
	≤ 1399 cm <sup>3</sup>	1400 cm <sup>3</sup> - 1999 cm <sup>3</sup>	≥ 2000 cm <sup>3</sup>	≤ 1399 cm <sup>3</sup>	1400 cm <sup>3</sup> - 1999 cm <sup>3</sup>	≥ 2000 cm <sup>3</sup>
Belgium <sup>(1)</sup>	293 568	2 474 956	431 039	5.0	42.8	7.4
Bulgaria	:	:	:	:	:	:
Czechia	:	1 839 849	374 125	:	33.2	6.5
Denmark	:	:	:	:	:	:
Germany	284 395	10 722 487	4 145 508	0.6	23.1	8.8
Estonia	3 253	157 133	131 211	0.4	21.6	17.6
Ireland	87 010	1 006 170	117 810	4.0	47.0	5.4
Greece	:	:	:	:	:	:
Spain	834 211	11 005 938	1 665 207	3.5	46.8	6.9
France	2 183 000	17 133 000	1 752 000	6.8	53.5	5.5
Croatia	50 969	688 317	105 260	3.1	43.1	6.3
Italy	168 879	15 090 689	2 062 025	0.4	:	5.3
Cyprus	5 417	51 410	42 554	1.0	9.8	7.7
Latvia	12 621	242 497	163 114	1.8	35.2	23.0
Lithuania	:	:	:	:	:	:
Luxembourg	:	:	:	:	:	:
Hungary	67 353	830 536	233 796	1.8	23.9	6.4
Malta	7 455	73 468	13 947	2.5	25.2	4.6
Netherlands	:	:	:	:	:	:
Austria	96 590	2 205 012	477 193	1.9	45.0	9.6
Poland	329 336	5 857 466	1 106 115	1.4	26.0	4.7
Portugal	330 467	2 162 734	470 207	6.3	42.7	8.9
Romania	117 057	2 373 254	402 611	1.8	39.6	6.2
Slovenia	18 544	466 362	70 594	1.6	41.7	6.2
Slovakia	:	:	:	:	:	:
Finland	14 205	543 154	343 934	0.4	16.0	9.9
Sweden	59 912	1 222 380	426 489	1.2	25.2	8.8
United Kingdom <sup>(2)</sup>	516 926	9 040 068	2 789 556	1.6	29.0	8.9
Liechtenstein	195	5 896	3 836	0.7	19.9	12.8
Norway	47 772	875 439	375 885	1.7	32.2	13.7
Switzerland	27 200	923 400	428 300	0.6	20.2	9.3
North Macedonia	:	:	:	:	:	:
Turkey <sup>(3)</sup>	593 688	3 801 166	174 046	4.8	31.6	1.4
Kosovo	5 181	149 341	39 970	2.0	88.5	15.6

Note: (:) not available.

(<sup>1</sup>) In the category 'Up to 1399' there are 13 537 passenger cars included of engine unknown.

(<sup>2</sup>) Great Britain only.

(<sup>3</sup>) In the category '1400 cm<sup>3</sup> - 1999 cm<sup>3</sup>' there are 6 841 passenger cars included of

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Source: Eurostat (online data code: road\_eqs\_carmot)



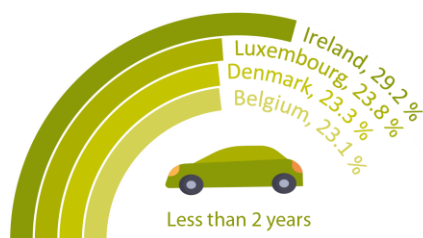
Table 4: Diesel-driven passenger cars by size of engine, 2018 (share of total registered passenger cars %) - Source: Eurostat ([road\\_eqs\\_carmot](#))

Despite efforts across Europe to increase the share of cars with low [CO<sub>2</sub> emissions](#), the share of passenger cars powered by alternative fuels remained low in most Member States in 2018. In most of the Member States, passenger cars using alternative energy represented less than 1 % of the total passenger car fleet. The most striking exception is Poland, where the share of passenger cars powered by alternative fuels reached 16 % in 2018. This is to a large extent due to a high number of cars retro-fitted for LPG (liquefied petroleum gas) use. Other countries with notable shares of passenger cars using alternative fuels are Italy (9 %), Lithuania (8 %), Latvia (7 %) and Sweden (6 %).

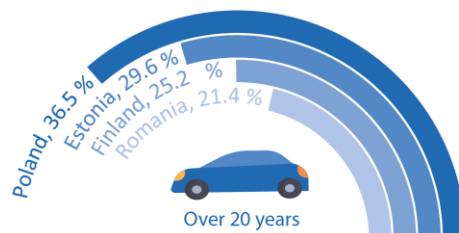
## Highest share of passenger cars over 20 years old in Poland

### AGE OF PASSENGER CARS, 2018

EU Member States with the highest shares of passenger cars younger than 2 years (% of total passenger cars)



EU Member States with the highest shares of passenger cars older than 20 years (% of total passenger cars)

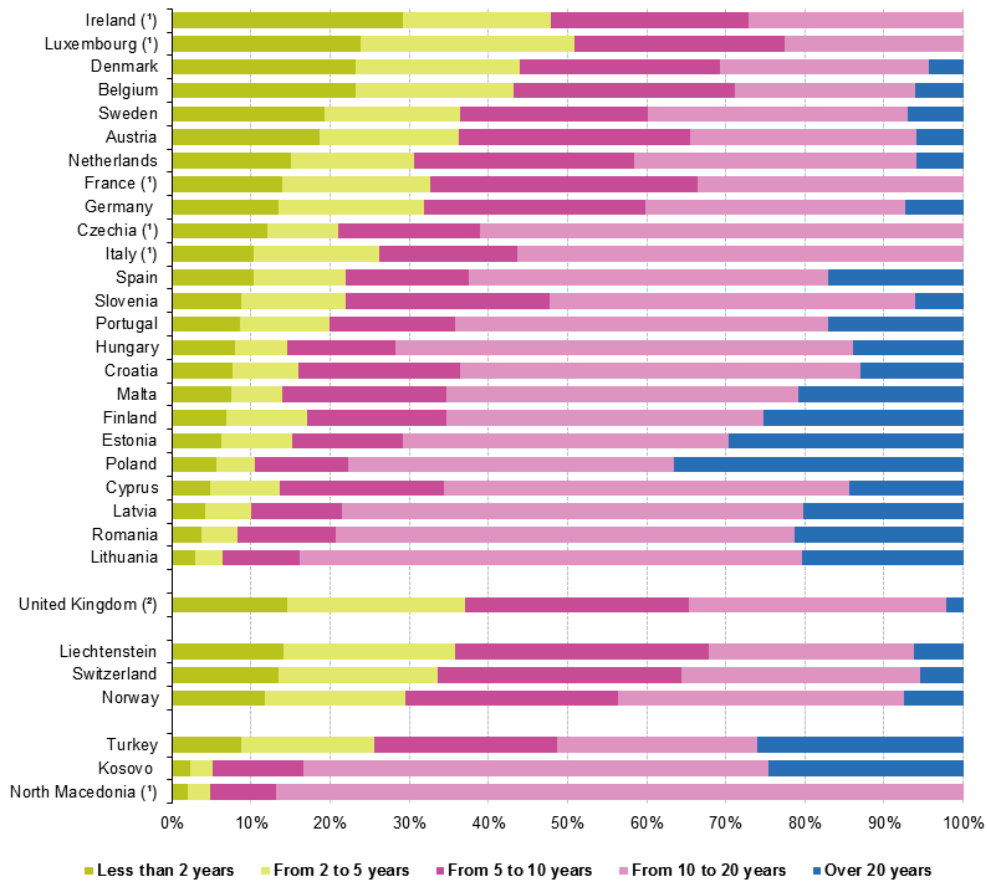


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Several Member States reported a large share of 'old' passenger cars (20 years or older) in 2018. The Member States with the highest shares were Poland (36.5 %), Estonia (29.6 %), Finland (25.2 %), Romania (21.4 %) and Malta (20.8 %). By contrast, the shares of the 'youngest' passenger cars (less than 2 years old) were highest in Ireland (29.2 %), Luxembourg (23.8 %), Denmark (23.3 %) and Belgium (23.1 %).

**Passenger cars by age, 2018**  
(% of all passenger cars)



Note: Bulgaria, Greece, Slovakia and Iceland: data not available.

(\*) the "from 10 to 20 years" breakdown includes passenger cars > 20 years

(\*) Great Britain only.

Source: Eurostat (online data code: road\_eqs\_carage)


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Figure 4: Passenger cars by age, 2018 (% of all passenger cars) - Source: Eurostat ([road\\_eqs\\_carage](#))

In recent years, a number of countries had programmes in place supporting the purchase of new cars with low emissions while scrapping the owners' old car. The general aim of these programmes was the renewal of the passenger car fleet with lower emission cars, while simultaneously stimulating the economy. These programmes have had a certain influence on the age composition of passenger cars in individual countries. Such programmes were set up in almost half of the Member States; in this context, one should take note of the [reference year](#) when analysing these data.

## Source data for tables and graphs

- [Passenger cars in the EU - update 2020](#) 

## Data sources

The Eurostat/ITF/UNECE Common Questionnaire on Inland Transport.

### Coverage

The data in this article covers the [EU Member States](#), the United Kingdom, the [EFTA countries](#) and the [candidate countries](#) ([list of countries and the corresponding country codes](#)).

### Definitions

All definitions used are taken from the Eurostat/UNECE/ITF Glossary for Transport Statistics, currently in its 5th edition. This glossary can be found on Eurostat's website [Eurostat/UNECE/ITF Glossary for Transport Statistics](#).

### Passenger cars

Road motor vehicle, other than a moped or a motor cycle, intended for the carriage of passengers and designed to seat no more than nine persons (including the driver).

Included are:

- Passenger cars
- Vans designed and used primarily for transport of passengers
- Taxis
- Hire cars
- Ambulances
- Motor homes
- Micro-cars (needing no permit to be driven)

Excluded are light goods road vehicles, as well as motor-coaches and buses, and mini-buses/mini-coaches.

### Motor energy

The principal type of motor energy used by the vehicle as certified by the competent authority of the country of registration. For hybrid or dual-fuelled vehicles adapted for using more than one type of motor energy (e.g. LPG and petrol, or electricity and diesel, etc.), the principal type of motor energy should be, where possible, an alternative fuel.

### Alternative fuel

A type of motor energy other than the conventional fuels, petrol and diesel. Alternative fuels include electricity, LPG, natural gas (NGL or CNG), alcohols, mixtures of alcohols with other fuels, hydrogen, bio-fuels (such as biodiesel), etc. (this list is not exhaustive). Alternative fuels do not include unleaded petrol, reformulated petrol or city (low-sulphur) diesel.

**Motorisation rate**

The number of registered passenger cars per 1000 inhabitants.

## Context

The Common Questionnaire on Inland Transport is a joint project of Eurostat, the International Transport Forum (ITF) and the United Nations Economic Commission for Europe ([UNECE](#)). The data are provided on a voluntary basis by a large number of countries, both within and outside the European Union. Data is collected from reliable sources, but data collection methodologies are not harmonised at EU level. Comparability across countries is restricted as the classifications used in the national vehicle registers are not harmonised. Vehicle registers may exclude taxis, pick-up and vans, and may also exclude very old vehicles. This article covers data provided by the EU Member States, the United Kingdom, the European Free Trade Association (EFTA) countries and EU candidate countries.