



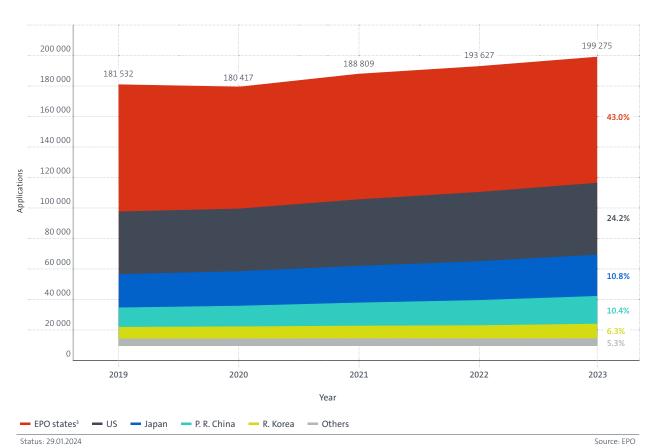
#### **Total European patent applications**

The European Patent Office (EPO) received a record 199 275 patent applications in 2023, up 2.9% on 2022. Digital and clean-energy technologies are once again the principal drivers of growth. Filings from P.R. China and the Republic of Korea saw the greatest absolute growth. The US remains the leading country of origin, accounting for almost a quarter of all patent applications, while Germany is second and leads the way in Europe.

This graph shows the geographic origin of the European patent applications<sup>1</sup> filed with the EPO. The geographic origin of the file is determined by the country of residence of the first applicant listed on the application form (firstnamed applicant principle<sup>2</sup>).

Figure 1





<sup>1</sup> European patent applications include direct European applications (Direct) and international (PCT) applications that entered the European phase during the

In cases where several applicants are mentioned on the application form, the country of residence of the first applicant listed applies.

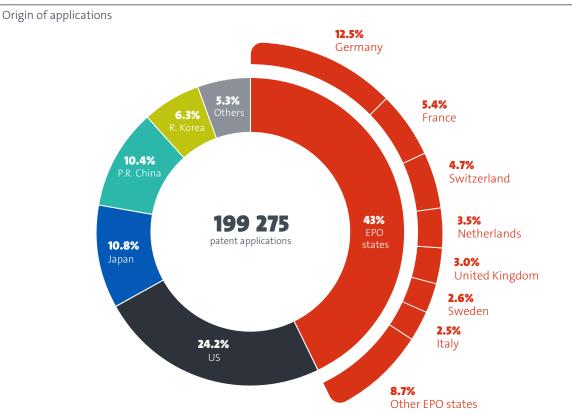
<sup>3</sup> EPO states: the 39 member states of the European Patent Organisation, which includes the 27 states of the EU.



### **Origin of European patent applications**

This graph shows the geographic origin of the European patent applications<sup>1</sup> determined by the country of residence of the first applicant listed on the application form ("first-named applicant" principle<sup>2</sup>).

Figure 2



Status: 29.01.2024 Source: EPO

- 1 European patent applications include direct European applications and international (PCT) applications that entered the European phase during the reporting period.
- 2 In cases where several applicants are mentioned on the application form, the country of residence of the first applicant listed applies.
- 3 EPO states: the 39 member states of the European Patent Organisation, which includes the 27 states of the EU.



### Top technical fields based on European patent applications

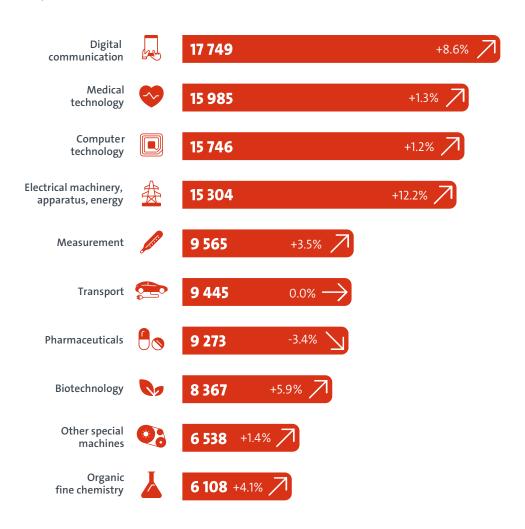
This page shows the number of European patent applications<sup>1</sup> filed with the EPO for the ten technology fields<sup>2</sup> with the largest number of applications in 2023.

Eight of the ten fields saw growth. The steepest increase was seen in electrical machinery, apparatus and energy, which includes clean energy inventions. Digital communication was once again the top technology

field, with innovation in other cutting-edge fields such as biotechnology continuing to rise. Filings remained robust in medical technology, computer technology and measurement, which includes sensors that are critical to the features of many smart devices. Overall, the top ten fields accounted for just over 57% of patent applications at the EPO in 2023.

Figure 3

Top technical fields



Status: 29.01.2024 Source: EPO

<sup>1</sup> European patent applications include direct European applications and international (PCT) applications that entered the European phase during the reporting period.

<sup>2</sup> The definition of the fields is based on the WIPO IPC technology concordance. The table is available at: www.wipo.int/ipstats/en/docs/ipc\_technology.xlsx



# Patent applications per million inhabitants

This country ranking<sup>1</sup> is based on the number of European patent applications<sup>2</sup> filed with the EPO per million inhabitants.<sup>3</sup>

Figure 4

Applications per million inhabitants

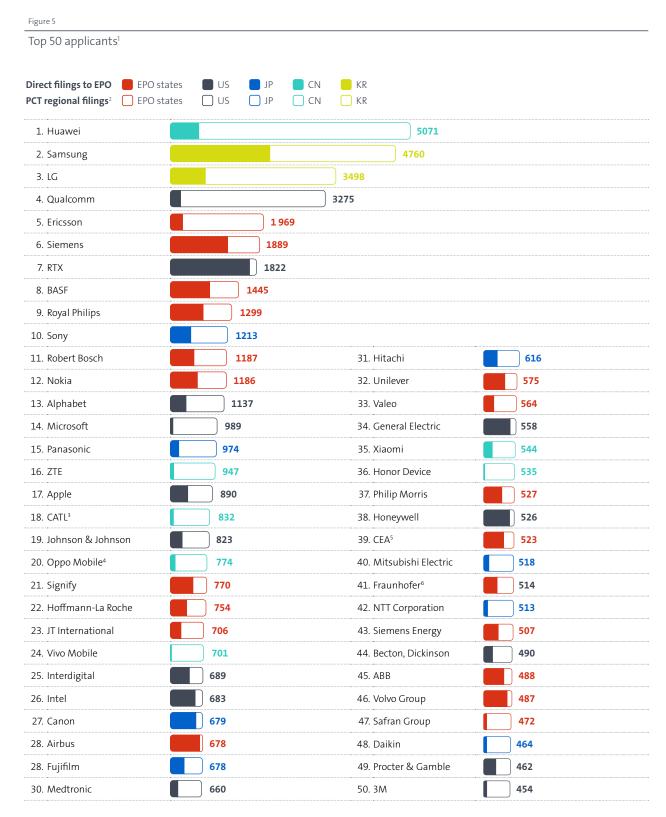
	Country	Applications in 2023	Population <sup>3</sup> (mio. inhabitants)	Ratio: applications per mio. inhabitants
1.	Switzerland	9 410	8.670	1 085.3
2.	Sweden	5 139	10.379	495.1
3.	Denmark	2 596	5.840	444.5
4.	Finland	2 336	5.534	422.1
5.	Netherlands	7 033	17.475	402.5
6.	Germany	24 966	83.155	300.2
7.	Austria	2 355	8.933	263.6
8.	Republic of Korea	12 575	51.784	242.8
9.	Belgium	2 547	11.555	220.4
10.	Ireland	1 057	5.006	211.1
11.	Israel	1733	9.175	188.9
12.	Singapore	1 057	6.015	175.7
13.	Japan	21 520	123.295	174.5
14.	France	10 814	67.657	159.8
15.	United States	48 155	339.997	141.6
16.	Norway	697	5.391	129.3
17.	United Kingdom	5 918	67.737	87.4
18.	Italy	5 053	59.236	85.3
19.	Slovenia	153	2.109	72.5
20.	Chinese Taipei	1 555	23.923	65.0
Status: 2	29.01.2024			Source: EPO

<sup>1</sup> The geographic origin is based on the country of residence of the first applicant listed on the application form (first-named applicant principle). In cases where several applicants are mentioned on the application form, the country of residence of the first applicant listed applies.

<sup>2</sup> European patent applications include direct European applications and international (PCT) applications that entered the European phase during the reporting period.

Source of population figures: United Nations, Department of Economic and Social Affairs, Population Division (2022); Eurostat (2022).





<sup>1</sup> This is the ranking of main consolidated applicants at the EPO in 2023 (first-named applicant principle). It is based on European patent applications filed with the applications that entered the European paletin applications (PCT) applications that entered the European phase (PCT regional) during the reporting period. Applications by identifiable subsidiaries, not necessarily located in the same country, are allocated to the consolidated applicants.

<sup>2</sup> PCT applications that entered the European phase during the reporting period.

Contemporary Amperex Technology Co. Ltd.

Guangdong Oppo Mobile Telecommunications Commissariat à L'énergie Atomique et aux énergies alternatives (CEA)

Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.

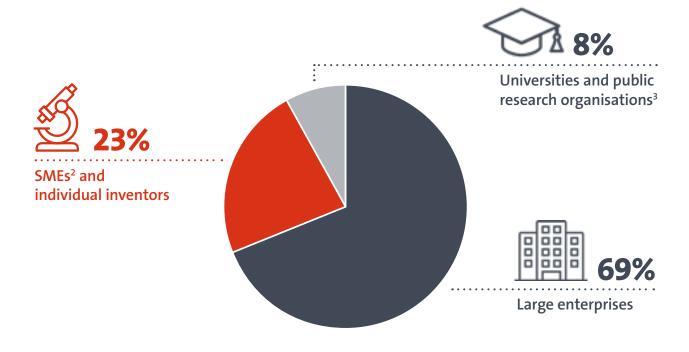


## Shares in applications originating from Europe<sup>1</sup>

A breakdown of patent applications originating from European countries shows that 69% of them were filed by large companies, 23% by individual inventors and SMEs, and 8% by universities and public research organisations. This shows that a significant proportion of applicants at the EPO are smaller entities.

Figure 6

Breakdown of applicants by type



Status: 29.01.2024 Source: EPO

- 1 This breakdown is based on a large representative sample of patent applications filed with the EPO in 2023 by applicants located in member states of the European Patent Organisation.
- 2 SMEs have been identified based on the European Commission definition of SMEs (2003/361/EC). According to this definition, an SME is i) an independent company with ii) less than 250 staff and iii) a turnover below €50 million and/or a balance
- sheet below €43 million. Detailed financial data and company ownership data from the BvD Orbis database have been used to enable a strict application of this definition.
- 3 This category includes technology transfer offices that while registered as corporate entities are clearly affiliated to a university or public research organisation.

#### **Women Inventor Rate**

In November 2022 the EPO published a study looking at women's participation in inventive activity, investigating how often women were named as inventors on patent applications. For 2023 we find that 27% of applications filed at the EPO from applicants based in one of the

<u>EPO's 39 member states</u> named at least one woman as an inventor. There is wide variation between countries and technology fields, indicating that there is still much to be done to encourage girls in STEM subjects at schools, and to encourage more women to follow careers in science and engineering.



### **Granted patents over 5 years**

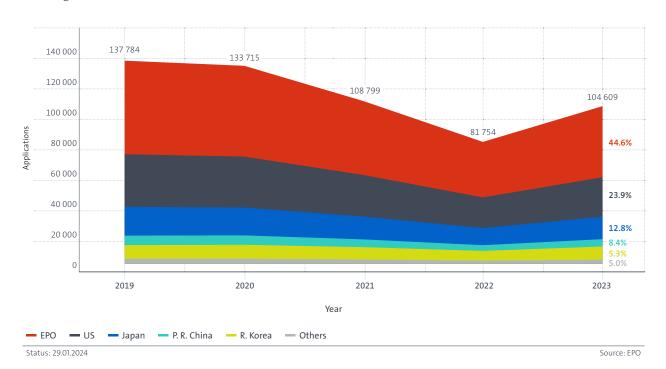
This graph shows the geographic origin of the patents granted by the EPO¹ based on the country of residence of the first patentee listed on the published patent<sup>2</sup>.

### **Uptake of the new Unitary Patent**

Of the 104 609 patents granted by the EPO in 2023, some 17.5% requested unitary effect, a single validation covering 17 EU member states. Uptake from patentees based in Europe was even higher, at 25.8%, comprising almost two thirds of all Unitary Patents.

Figure 7

#### Patent grants



The analysis is based on published patents granted by the EPO.

The geographic origin is based on the country of residence of the first patentee listed on the published patent. In cases where several patentees are mentioned on the published patent, the country of residence of the first patentee listed applies.

<sup>3</sup> EPO states: the 39 member states of the European Patent Organisation, which includes the 27 states of the EU.



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