



Stabsstelle für Wirtschafts-, Europa- und Fördermittelaangelegenheiten

Economic Development in Duisburg

4th Edition of the Structural Monitoring Report 2025

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Publisher

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Foreword

Dear readers,

Duisburg is maintaining its position as an important business location in the Ruhr region and, despite global challenges, is demonstrating robust and future-centric development. Supported by a diverse industrial structure, Duisburg's economic performance has been further expanded. This is demonstrated by the findings of our "Structural Monitoring" efforts. As a result, gross domestic product rose significantly from EUR 18,520 million to EUR 20,865 million. The number of employees subject to national insurance contributions has also remained at a consistently high level of 178,452 for the past five years.

Due to the crisis in the steel industry, there is currently much discussion throughout Germany about our business location. Duisburg remains the heart of German steel production. It is a location with tradition, but also with a future. We are committed to preserving this key industry, as it is essential for value creation, employment and technological innovation – including for the entire value chain in Germany. At the same time, we are pushing ahead with the diversification of the economic structure, in order to tap into new growth areas in the green industry, new materials, robotics and artificial intelligence, among other things.

This requires important success factors, such as well-trained employees. This is where education and training prove to be a particularly stable pillar in Duisburg: the number of academics has risen by over 3,000 in the last six years. At the end of 2023 alone, over 9,600 apprentices were registered in Duisburg, and the number of educational qualifications remains consistently high. The challenges posed by structural change are considerable, but Duisburg has already proven that change can be actively shaped. With the right balance of tradition and innovation, the city will continue to build on its economic strength.

We invite you to follow Duisburg's development and hope you find this publication informative.



*Michael Rüscher, Councillor for
Economy, Integration, Security, and
Public Order for the City of Duisburg*

A handwritten signature in black ink, appearing to read "M. Rüscher".

Yours, Micheal Rüscher
Head of Economic Affairs of the City of Duisburg

Management Summary – At a glance

Structural Monitoring 2025 presents all the factors that make the City of Duisburg both an attractive business location and a popular residential and recreational centre. Below we present a brief summary of the most important facts from the brochure:

Population

- Population: 507,876 (December 2024)
- 313,442 inhabitants (just under 62 % of the total population) of working age between 18 and 64 in 2024



Duisburg Labour Market

- Unemployment rate: 12.5 % (2024)
- Employees subject to national insurance contributions: 178,452 (2024)
- Leading industries by employees subject to national insurance contributions (2024):
 - Metal, electrical and steel industries: 27,124 employees subject to national insurance contributions
 - Trade, maintenance and repair of motor vehicles: 22,127 employees subject to national insurance contributions
 - Transport and warehousing 19,285 employees subject to national insurance contributions
 - Other business services: 17,519 employees subject to national insurance contributions
 - Healthcare: 14,701 employees subject to national insurance contributions
- Employees subject to national insurance contributions (2023):
 - Men: 58 %
 - Women: 42 %
- Apprentices: 9,653 (2023)



Economic strength

- Gross domestic product: EUR 20,865 million (2022)
- Gross value added: EUR 18,889 million (2022)
- Available income: EUR 9.6 million (2022)
- Business registrations: 3,444 (2024)
- Investment by the City of Duisburg EUR 110.1 m (2023)



Education

- 16,764 daycare places in 207 daycare centres (2024/2025)
- 20,747 primary school children in 76 primary schools (2023/2024)
- 50,152 pupils in 57 secondary schools (2023/2024)



Research

- 18,427 students at four universities (2024)
- 15 research institutes (2024)
- Employees subject to national insurance contributions with academic degree: 26,936 (2023)
- 317 patent applications (2023)



Land use

- Operational areas make up around 21 % of the urban area, of which around one third belongs to the Port of Duisburg
- 17 % of the area is residential
- 20 % concerns sport and semi-natural recreational areas including forested areas
- Future construction projects: Wedau technology district, hydrogen projects



Infrastructure and transport

- Together, the A3, A40, A42, A524 and A59 motorways form the 62.5-kilometre-long motorway network
- Railway network: 211.7 km
- Waterways:
 - Usable area 21.61 km²
 - Length on plan: 243 km
 - Port of Duisburg 1,550 ha



Location marketing

- Part of three regions: Lower Rhine, Ruhr and Rhineland
- Rhine-Waal Euroregion: over 30 years of cooperation with the Netherlands
- Rhineland metropolitan region: intercommunal cooperation in the Rhineland



The economic impact of the steel industry

- Every euro generated by the steel industry generates an additional EUR 1.47 in Germany.
- It generates a gross domestic product of EUR 5.3 billion.
- It generates EUR 931.2 million in taxes, of which EUR 63.5 million remains in Duisburg, EUR 222.6 million in North Rhine-Westphalia and EUR 413 million in the federal government; a further EUR 232.1 million goes to other municipalities and states.
- It pays EUR 1.3 billion in social security contributions.



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1. Population

1.1 Development of the population

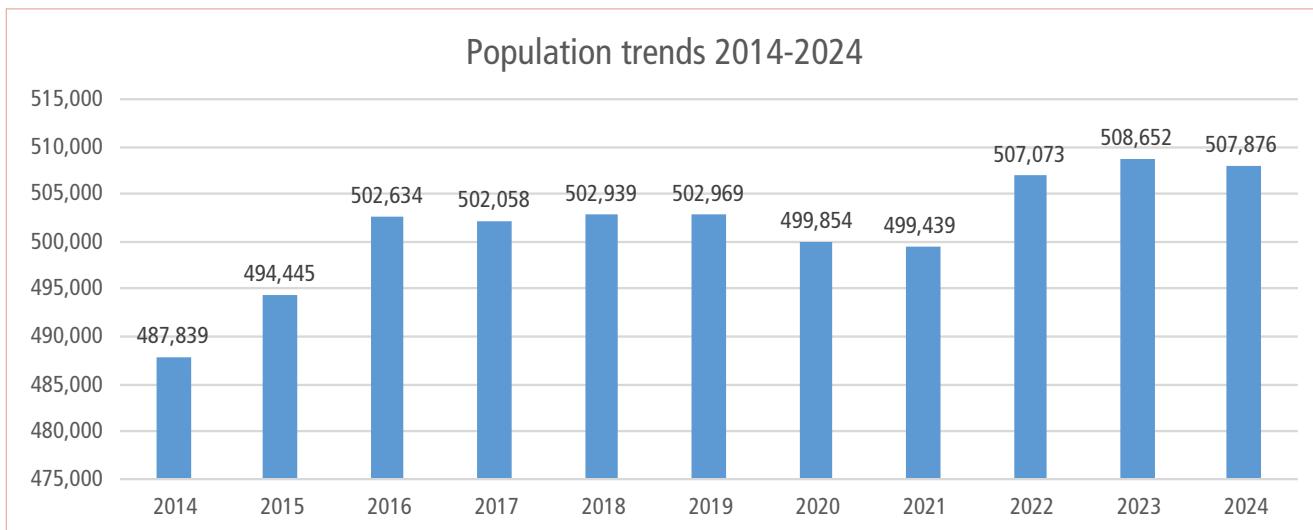


Figure 1: Population trend ¹

In the years leading up to 2019, Duisburg's population grew steadily, peaking at 502,969. However, in 2020 and 2021, there was a slight decline due to border closures and contact restrictions during the coronavirus pandemic. In the years that followed, the population recovered, reaching a new high of 508,652 inhabitants in 2023. This increase is mainly due to increased immigration of Ukrainian nationals who have left their country because of the war between Russia and Ukraine. One year later, the peak registered a slight decline. In 2024, 507,876 people lived in Duisburg.

As the population changes, the age structure of the population also changes:

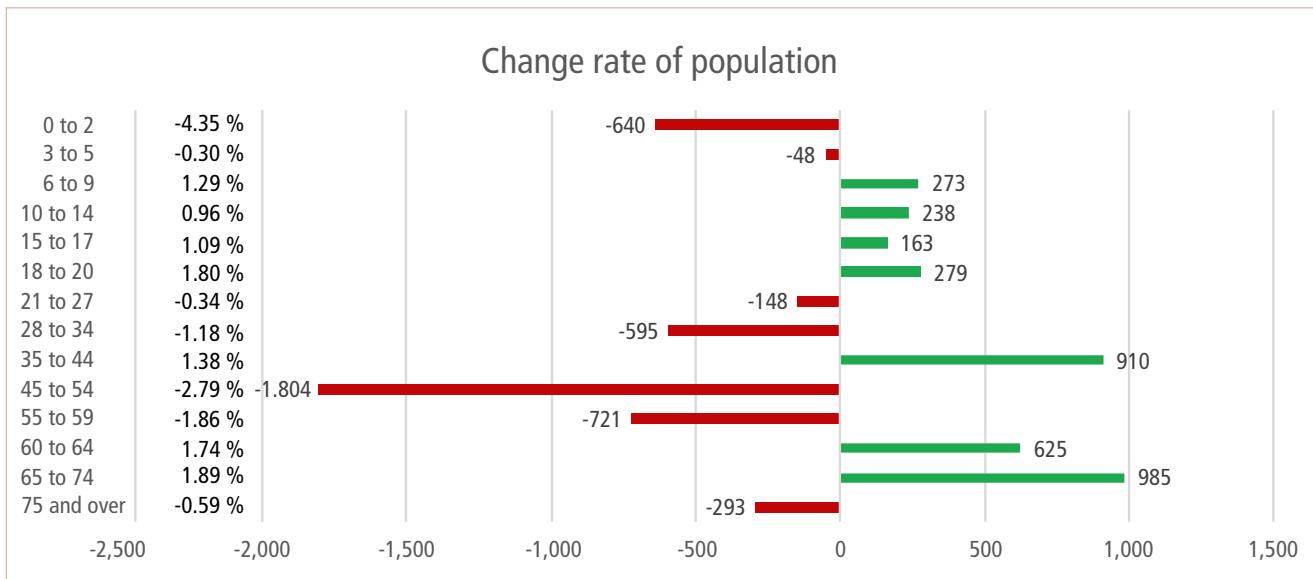


Figure 2: Rate of change in population compared to the previous year (2024 to 2023)²

In 2024, the 65 to 74 age group recorded the largest increase. Their number rose by 985 (+1.89%) compared to the previous year. This group also recorded the highest percentage increase. The 35 to 44 age group also grew significantly, with an increase of 910 people (+1.38%). In contrast, the population declined in seven age groups com-

1 Source: City of Duisburg, as of: 12.2024

2 Source: City of Duisburg, as of: 12.2024

pared to 2023. The 45 to 54 age group was particularly affected, with a decline of 1,804 people (-2.79%). However, the highest percentage decline was observed in the 0 to 2 age group, at -4.35%, which corresponds to 640 fewer infants.

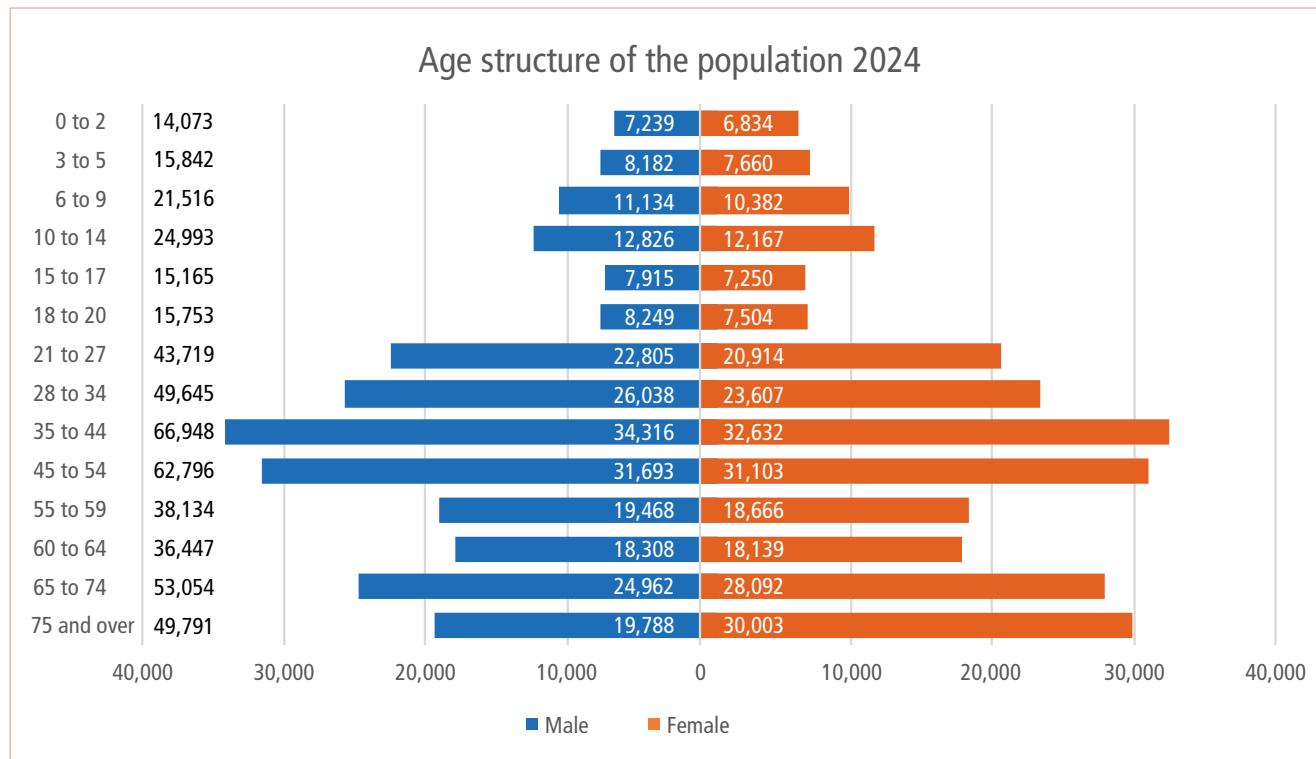
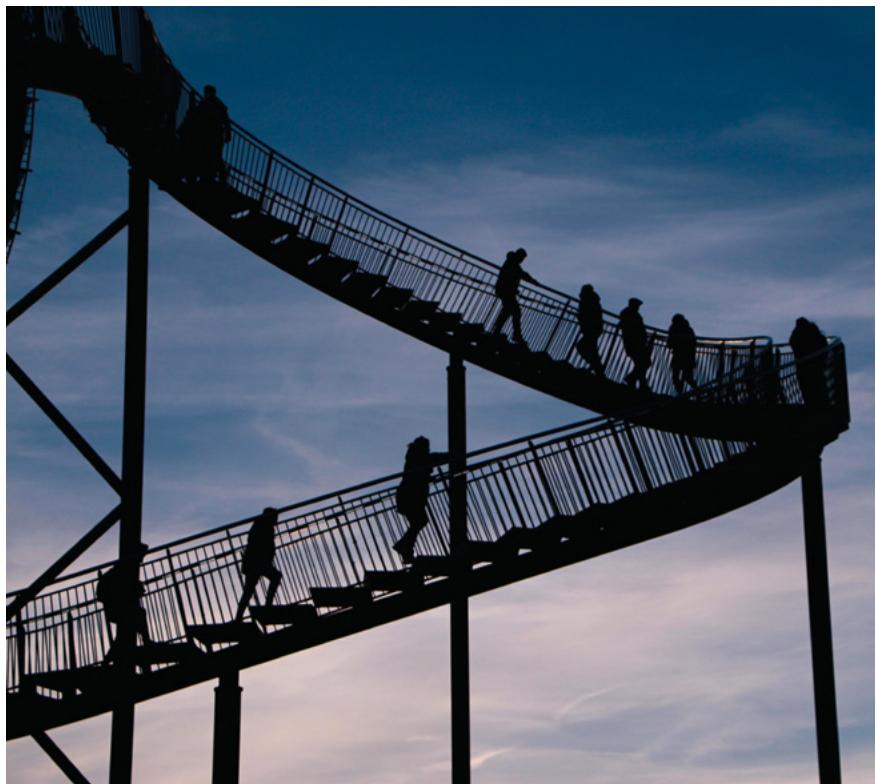


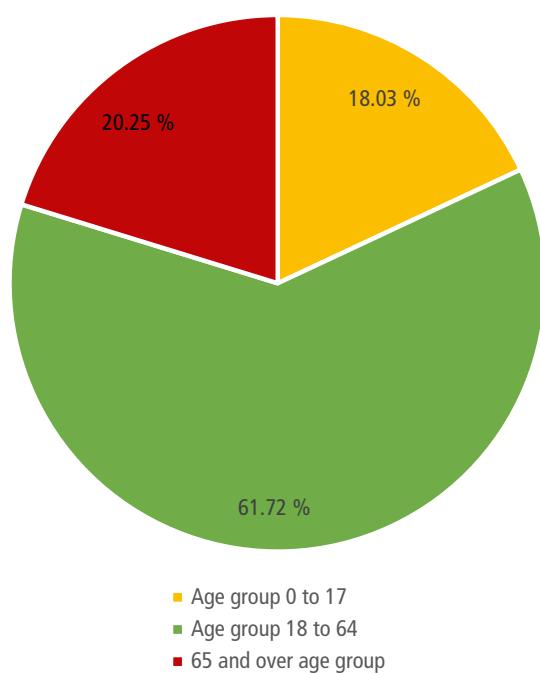
Figure 3: Absolute age structure of the population ³

In 2024, Duisburg had a total of 507,876 registered residents. The largest population group was the 35 to 44 age group with 66,948 people, followed by the 45 to 54 age group as the second largest group. The smallest age groups were the 0 to 2-year-olds with 14,073 people and the 15 to 17-year-olds with 15,842 people. It is also striking that in all age groups under 64, the number of men slightly exceeds that of women. From the age group of 65 to 74, this ratio reverses and there are significantly more women than men. This could be related to women's higher life expectancy. Overall, women accounted for 50.20% of the total population (254,953), while men accounted for 49.80 % (252,923).



³ Source: City of Duisburg, as of: 12.2024

Age structure of the population 2024



development.

Figure 4: Percentage age structure of the population ⁴

Between childhood and retirement – an overview of the age structure of Duisburg's population:

Children and young people (aged 0–17) make up 18.03 % of the population, with 91,589 individuals. They are important for education, care and securing the supply of skilled workers. The largest group is the working-age population (aged 15–64), which comprises 313,442 people (61.72 %). They are, therefore, the central pillar of the local economy, the labour market and tax revenue. Senior citizens (aged 65 and over) account for 102,845 people (20.25 %). They are often no longer in paid employment, but are nevertheless extremely important to the city as consumers and volunteers, and due to their life experience. With a growing number of older people, issues such as care, health and ageappropriate living are becoming increasingly relevant.

This distribution highlights the demographic challenge and, at the same time, the opportunity for Duisburg to prepare young people for their future and ensure quality of life for older generations. The high proportion of the population in employment demonstrates the city's economic potential, while the focus on children and young people sets the course for long-term

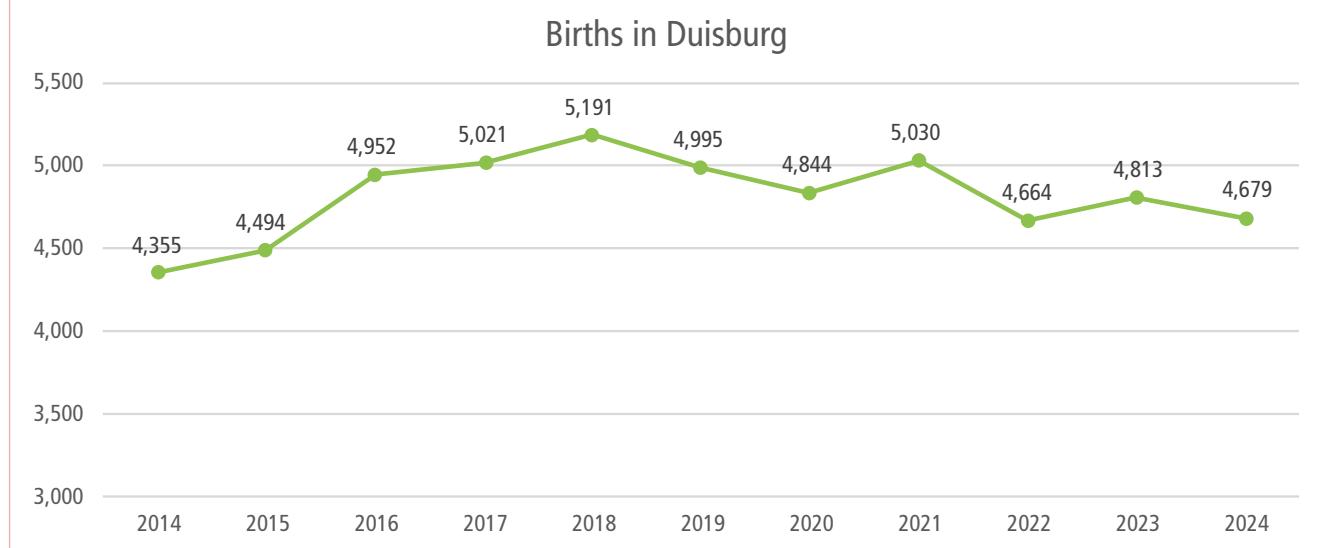


Figure 5: Number of new births in Duisburg ⁵

The number of births in Duisburg has grown continuously since 2014. This reached a maximum in 2018 with 5,191 births. The numbers declined slightly in the following years 2019 (4,995) and 2020 (4,844). In 2021 there was another increase compared to the previous year with 5,030 births. In 2023, the number rose again to 4,813, before falling back to 4,679 in 2024.

4 Source: City of Duisburg, as of: 12.2024

5 Source: City of Duisburg, as of: 12.2024

1.2 Integration, internationality and linguistic diversity

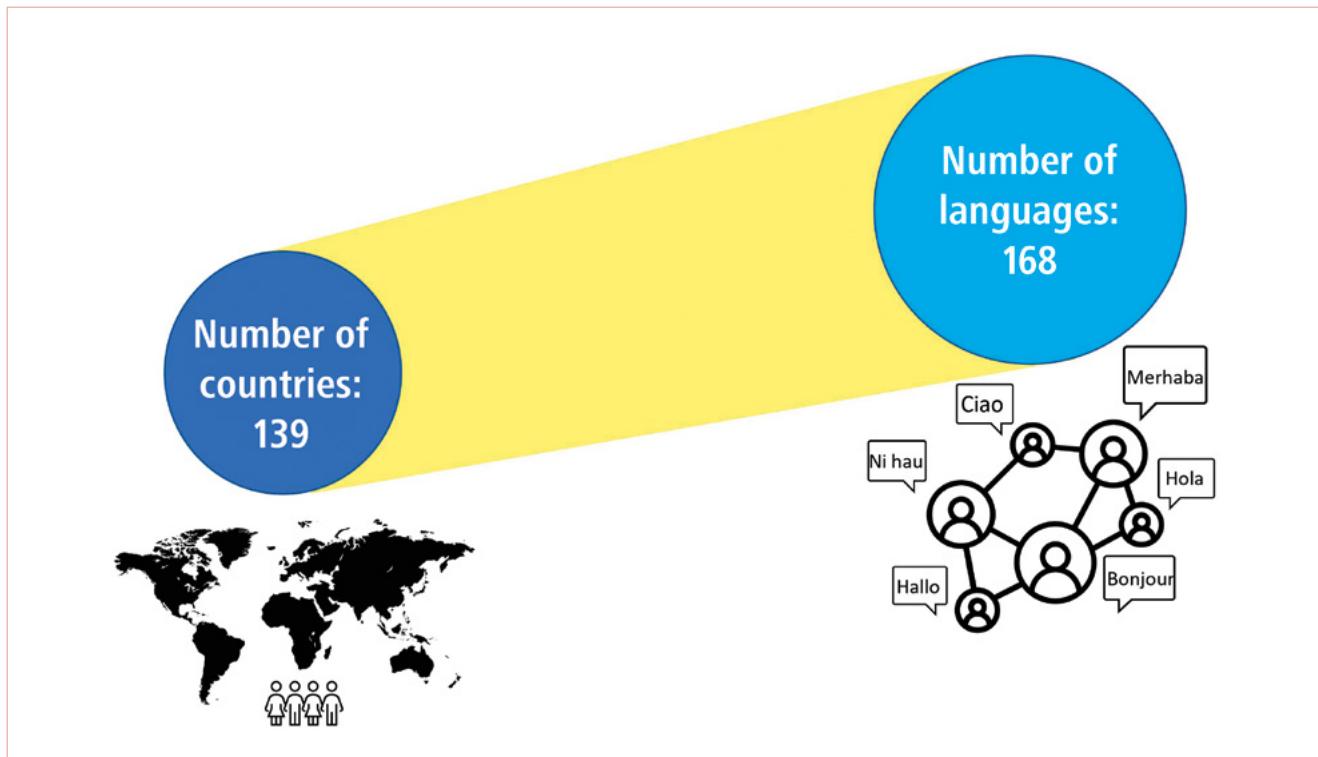


Figure 6: Internationality in Duisburg ⁶

The city of Duisburg is international. For decades the population has been characterised by immigration and multi-cultural influences. The main reasons were the post-war period and the 'economic miracle'. In the early 1950s the economy of the Federal Republic boomed. The number of job vacancies far exceeded the number of job seekers. In 1955 the first recruitment agreement for labour migration was signed between Germany and Italy. Further agreements with other countries followed. In 2021 the German-Turkish labour migration agreement celebrated its 60th anniversary, and also the flows of refugees from Syria and other African countries in 2015 and 2016 as well as from Ukraine in 2022 have contributed to the diversity of the City of Duisburg. Furthermore, the University of Duisburg-Essen and the Folkwang University of the Arts in Duisburg attract numerous international students. This identity-forming diversity for Duisburg is reflected in the special linguistic and cultural diversity of the population. Thus in 2024 there were people from 139 different countries living in Duisburg, speaking 168 different languages.



⁶ Source: City of Duisburg, as of: 03.2023

2. Labour market and training

2.1 Unemployment rate

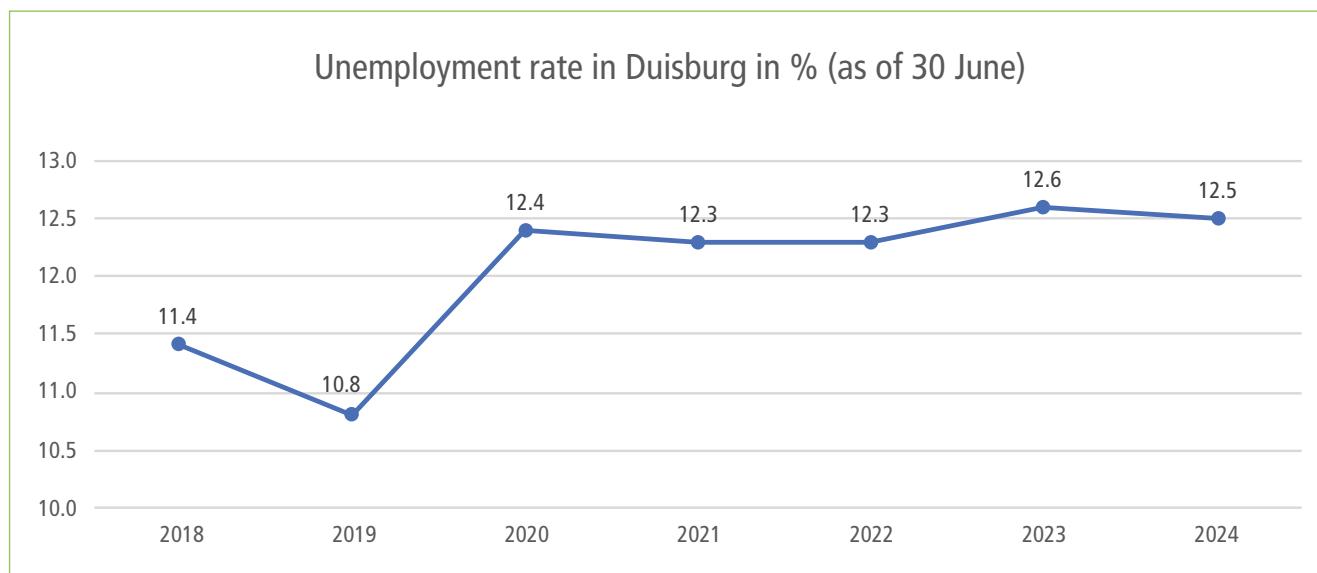


Figure 7: Unemployment rate ⁷

By 2019, the unemployment rate in Duisburg had fallen to 10.8 %, reaching its lowest level in the entire observation period. However, in the years that followed, the coronavirus pandemic and the global energy crisis led to a rise in the unemployment rate. In 2023, 12.6 % of Duisburg residents of working age were registered as unemployed. A year later, the rate fell slightly again to 12.5 %.

2.2 Number of employees subject to national insurance contributions

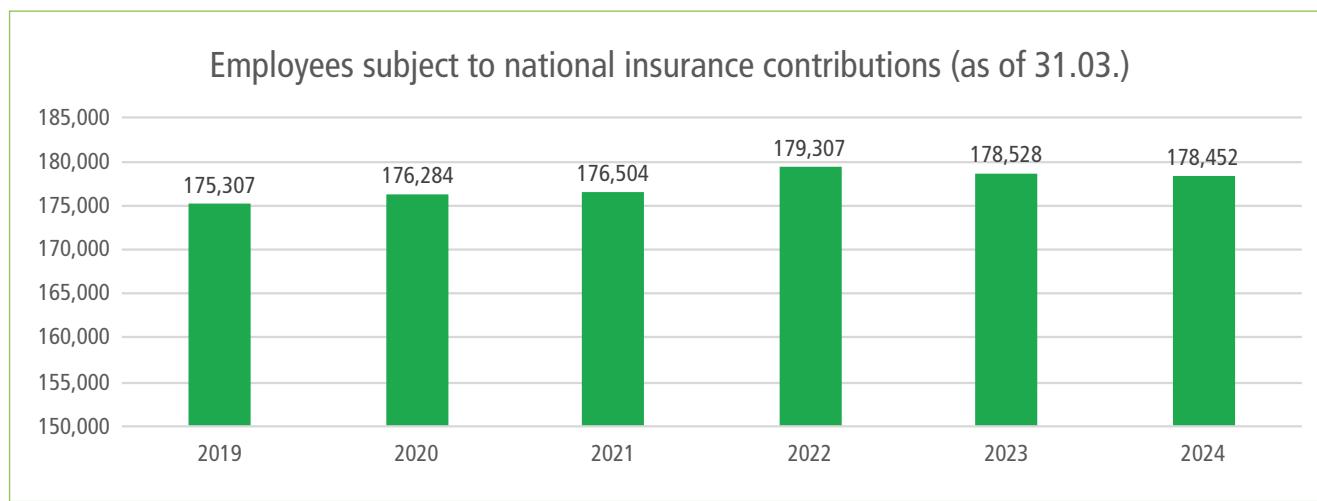


Figure 8: Employees subject to national insurance contributions ⁸

7 Source: Statistics of the Federal Employment Agency, as of: 06.2024

8 Source: Statistics of the Federal Employment Agency, as of: 03.2024

From 2019 to 2021, there was initially a slight increase in the number of employees subject to national insurance contributions. Several factors attributable to the outbreak of the COVID-19 pandemic had a negative impact on the labour market and employment during this period. These included economically induced job losses, increased economic fluctuations and the postponement or cancellation of new hires due to uncertainty. In the following year, 2022, the labour market recovered. The number of employees subject to national insurance contributions rose to 179,307, setting a new record for the city.

A rise in the European Central Bank's key interest rate from mid-2022 onwards and a significant increase in energy costs as a result of the war in Ukraine placed additional financial burdens on many companies.

In 2023, employees subject to national insurance contributions, therefore, fell again to 178,528.

Since then, however, the situation for companies has stabilised somewhat, with the labour market remaining steady. This stabilisation is also reflected in the labour market in Duisburg, which currently has 178,452 employees subject to national insurance contributions.



Employees subject to national insurance contributions by industry (as of 03.2024)

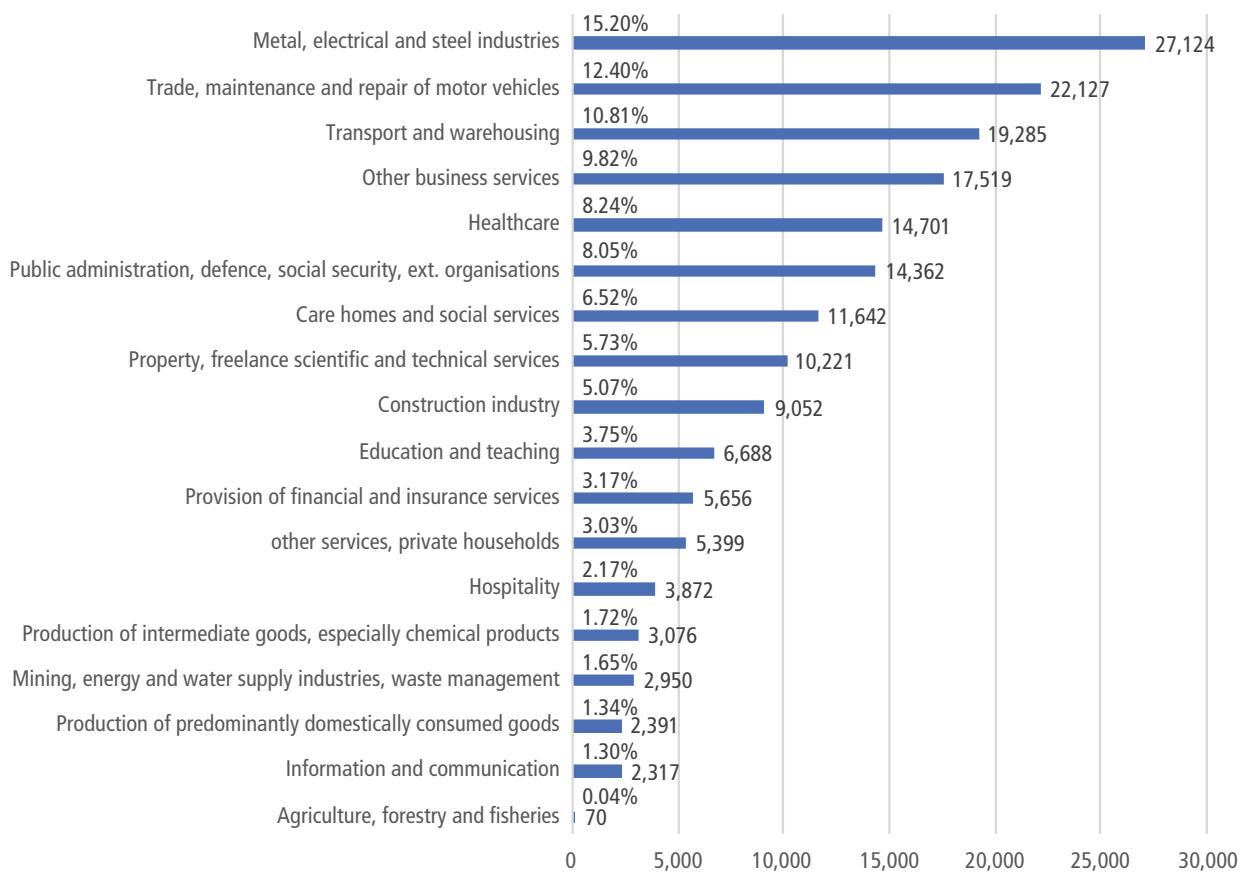


Figure 9: Employees subject to national insurance contributions by industry ⁹

9 Source: Statistics of the Federal Employment Agency, as of: 06.2024



In Duisburg, 27,124 employees are subject to national insurance contributions in the metal, electrical and steel industries. This industry remains a central pillar of the local economy and plays a significant role in industrial value creation. The trade, maintenance and repair of motor vehicles (22,127 employees subject to national insurance contributions), the transport and storage industry (19,285 employees subject to national insurance contributions) and the economic services sector (17,519 employees subject to national insurance contributions) are also among the city's most important economic industries. Despite the continuing importance of manufacturing, significant transformation processes can be seen in Duisburg, pointing to the development of new economic sectors.

Change in employees subject to national insurance contributions compared to the previous year 2023/2024

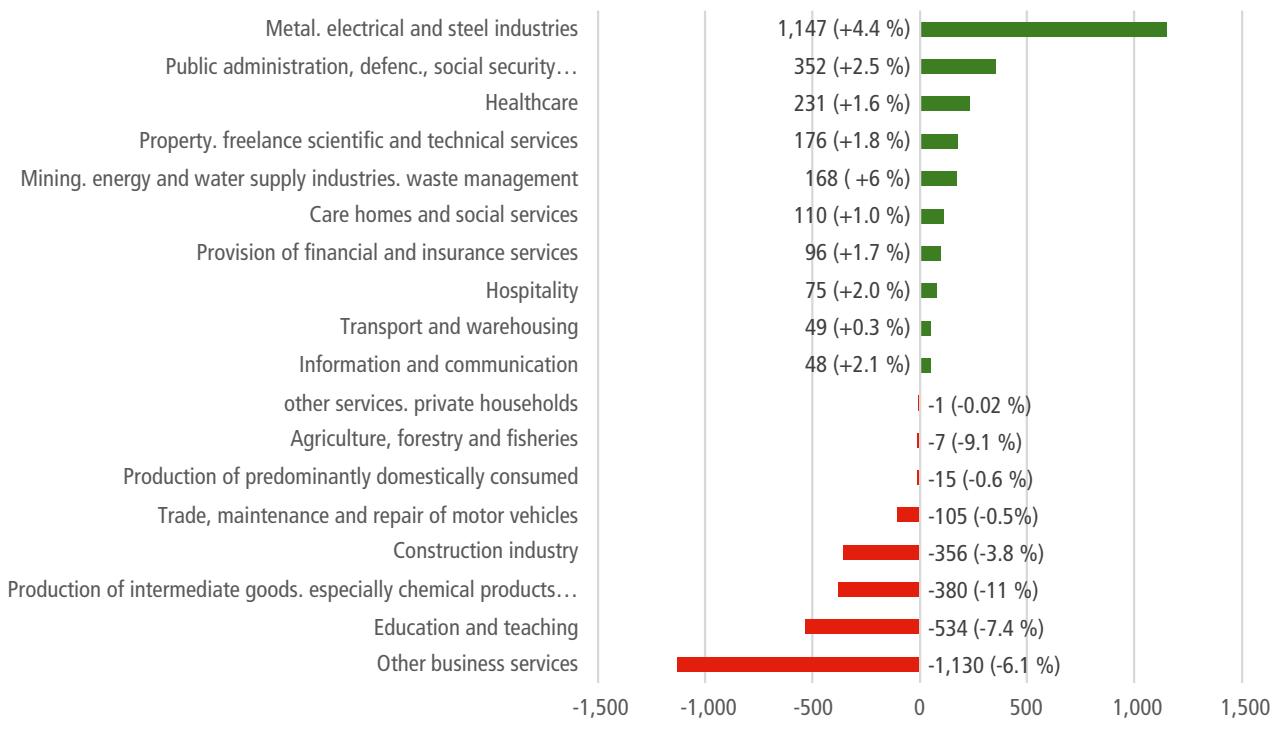


Figure 10: Absolute change in employees subject to national insurance contributions when compared to the previous year ¹⁰

Looking at the change in the absolute numbers of employees subject to national insurance contributions, there was a significant increase of 1,147 in the metal, electrical and steel industry. In percentage terms, the industry also recorded the largest increase (+4.4 %). At the same time, there was a significant decline of 11 % (-380) in the em-

10 Source: Statistics of the Federal Employment Agency, as of: 06.2024

loyees subject to national insurance contributions for the manufacture of intermediate goods. In absolute terms, the other economic services industry lost the most employees subject to national insurance contributions. This number fell by a total of 1,130 (-6.1 %) jobs.

Employees subject to national insurance contributions by economic sector (as of 03.2024)

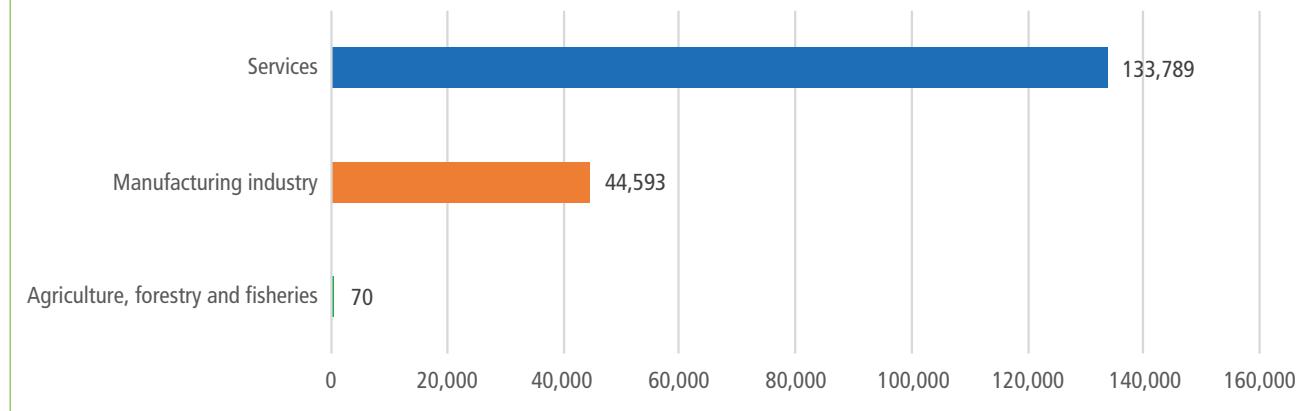


Figure 11: Employees subject to national insurance contributions by economic sectors ¹¹

More than two-thirds of employees subject to national insurance contributions (133,789) work in the service sector. In addition, there is still an impressive number of 44,593 employees subject to national insurance contributions in the manufacturing sector. The agriculture, forestry and fishing sector is equally important for the stability and dynamism of the synergistic interlocking of Duisburg's economy. This comes to a total of 70 employees subject to national insurance contributions.

Employees subject to national insurance contributions by industry for companies with fewer than 5,000 employees (as of 31.03.)

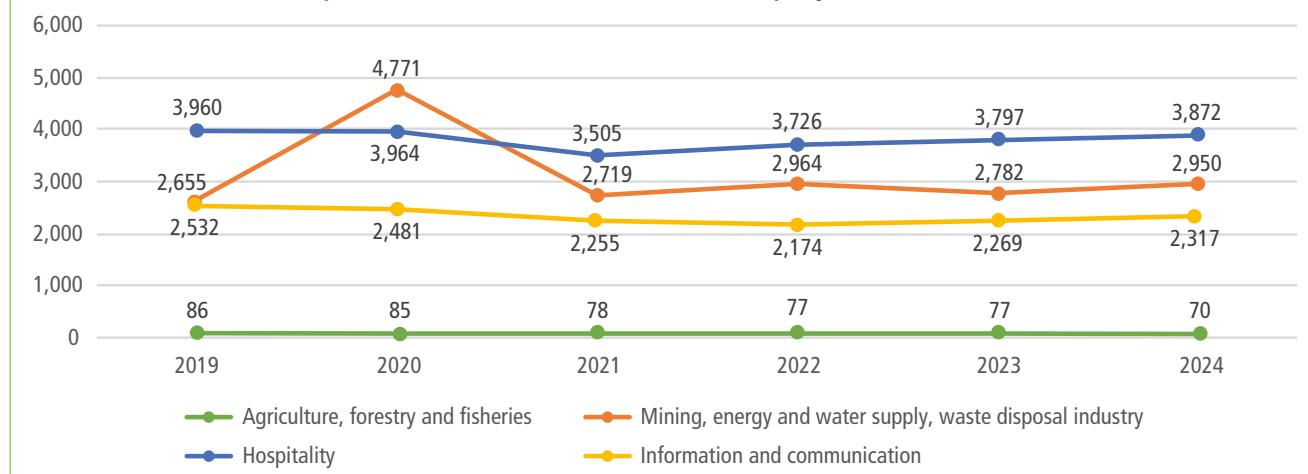


Figure 12: Industries with fewer than 5,000 employees subject to national insurance contributions ¹²

The number of employees subject to national insurance contributions in the 'agriculture, forestry and fishing' industry fell from 86 to 70 over the entire period under review, but remained relatively stable compared to other industries. The development in the 'mining, energy and water supply, and waste management' industries is striking. In 2020, the number of employees subject to national insurance contributions jumped to 4,771, exceeding the 4,000 mark for the first time. However, the following year, the number fell back to the 2019 level. One possible explanation for this short-term increase could be high staffing requirements in the energy supply sector during the corona-

11 Source: Statistics of the Federal Employment Agency, as of: 06.2024

12 Source: Statistics of the Federal Employment Agency, as of: 06.2024

virus pandemic, for example, due to temporary hires to maintain infrastructure or changes in corporate structures, mergers or spin-offs. In the years that followed, the number of employees increased slightly, reaching 2,950 employees subject to national insurance contributions in 2024. The 'hospitality' and 'information and communication' industries recorded very similar trends in the number of employees subject to national insurance contributions over the entire period.

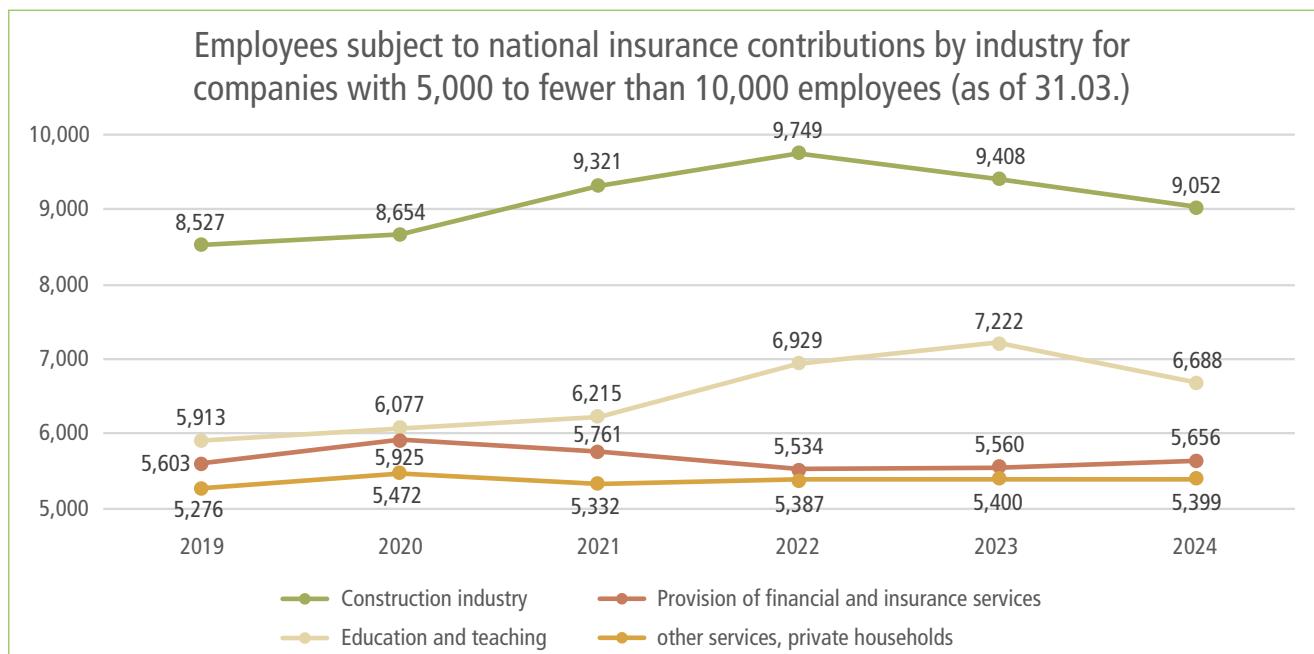


Figure 13: Industries with 5,000 to less than 10,000 employees subject to national insurance contributions ¹³

The 'construction' industry initially recorded strong growth from 8,527 employees subject to national insurance contributions (2019) to 9,749 employees subject to national insurance contributions (2022), before falling to 9,052 by 2024. The increase could be linked to a construction boom driven by low interest rates and government subsidies, while the decline could be attributed to rising construction costs and higher interest rates. The 'financial and insurance services' industry developed similarly, growing to 7,222 employees subject to national insurance contributions by 2023 before falling to 6,688 in 2024. The growth could be due to increased demand for financial and insurance services in times of crisis, while the decline points to market saturation or job cuts. The industries 'education and teaching' and 'other services, private households' remained largely stable throughout the entire period.

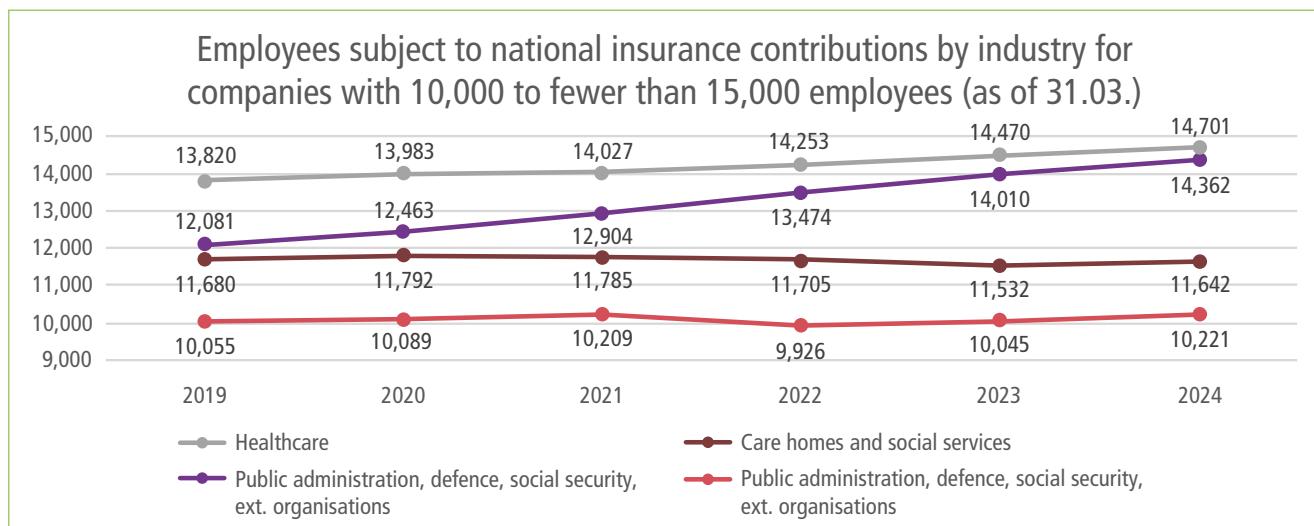


Figure 14: Industries with 10,000 to less than 15,000 employees subject to national insurance contributions ¹⁴

13 Source: Statistics of the Federal Employment Agency, as of: 06.2024

14 Source: Statistics of the Federal Employment Agency, as of: 06.2024

The industries 'healthcare' and 'public administration, defence, social security, ext. organisations' recorded continuous growth in employees subject to national insurance contributions over the entire period, with the increase being more pronounced in public administration. Here, the number of employees subject to national insurance contributions rose from 12,081 in 2019 to 14,362 in 2024, while the healthcare sector grew from 13,820 to 14,701 employees subject to national insurance contributions over the same period. The industries 'real estate, professional, scientific and technical services' and 'care homes and social services' show their own respective development patterns, but are similar to each other. Both showed a slight increase in the number of employees subject to national insurance contributions until 2021, followed by a decline in 2022, before the figures rose again from 2023 onwards.

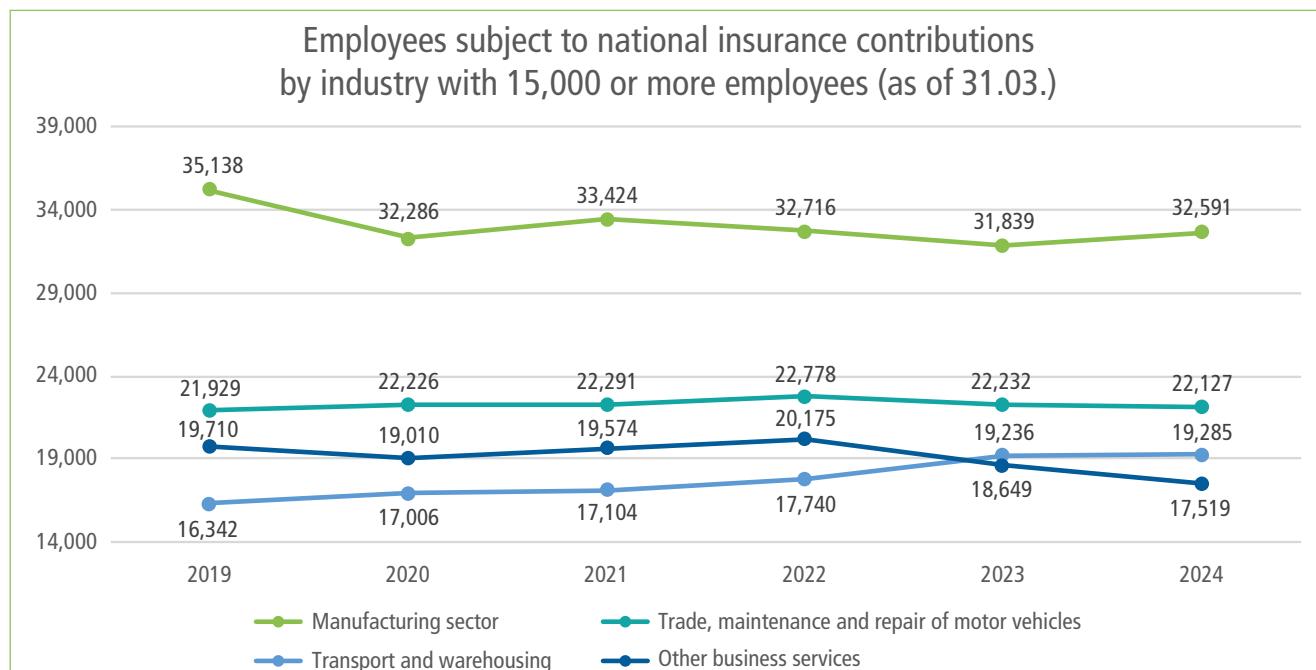


Figure 15: Industries with over 15,000 employees subject to national insurance contributions ¹⁵

With over 32,000 employees subject to national insurance contributions in 2024, the manufacturing industry will remain the largest employer in Duisburg. However, at the beginning of the period under review, the number of employees fell from 35,138 in 2019 to 32,286 in 2020, which could be attributed, among other things, to the effects of the coronavirus pandemic. The 'motor vehicle trade, maintenance and repair' industry developed relatively steadily and will remain the second largest sector in 2024 with 22,127 employees subject to national insurance contributions. 'Transport and storage' recorded steady employment growth and even surpassed the 'other economic services' industry in 2023, which fluctuated during the period under review and most recently fell to 17,519 employees subject to national insurance contributions in 2024.



15 Source: Statistics of the Federal Employment Agency, as of: 06.2024

2.3 Female labour force participation

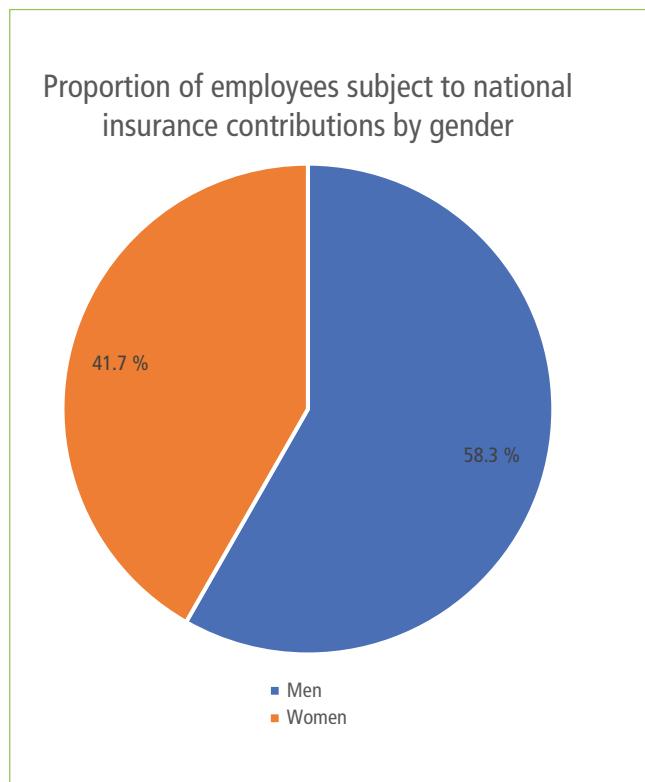


Figure 16: Gender employment rate¹⁶

The distribution of occupational segments shows clear gender-specific differences: women dominate, in particular, in 'personal services' (73 %) and 'commercial and business services' (60 %). Men, on the other hand, are overrepresented in 'IT and scientific service occupations' (82 %), 'other economic service occupations' and 'production occupations'.

One example of promoting women's participation in the labour market is the 'Competence Centre for Women and Careers' in the Lower Rhine region. It supports small and medium-sized enterprises in targeting female professionals, establishing a family-friendly corporate culture and promoting diversity in the workplace. It also promotes female mentoring programmes for start-ups and female entrepreneurs. The Competence Centre, which has been based in the city of Duisburg since 2012, is funded by the North Rhine-Westphalia Ministry for Children, Youth, Family, Equality, Refugees and Integration (Ministerium für Kinder, Jugend, Familie, Gleichstellung, Flucht und Integration NRW) and works closely with partners from industry to promote the retention of skilled workers and equal career opportunities for women.

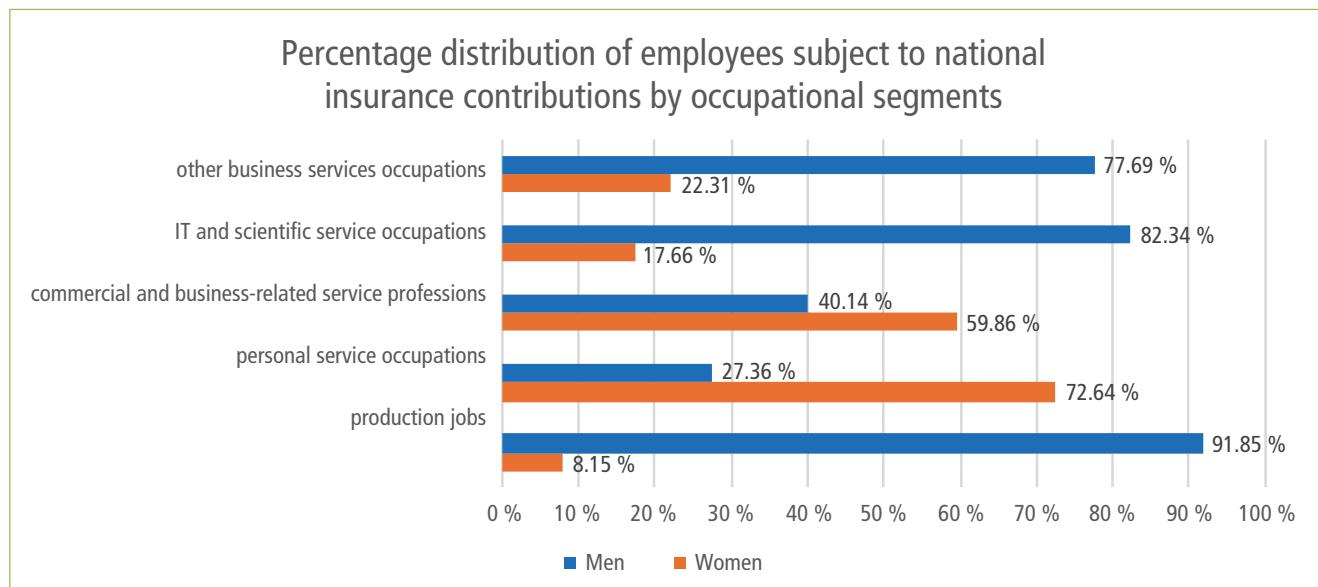


Figure 17: Percentage distribution of employees subject to national insurance contributions by occupational segments¹⁷

16 Source: Statistics of the Federal Employment Agency, as of: 06.2024

17 Source: Statistics of the Federal Employment Agency, as of: 06.2024

2.4 Commuter numbers

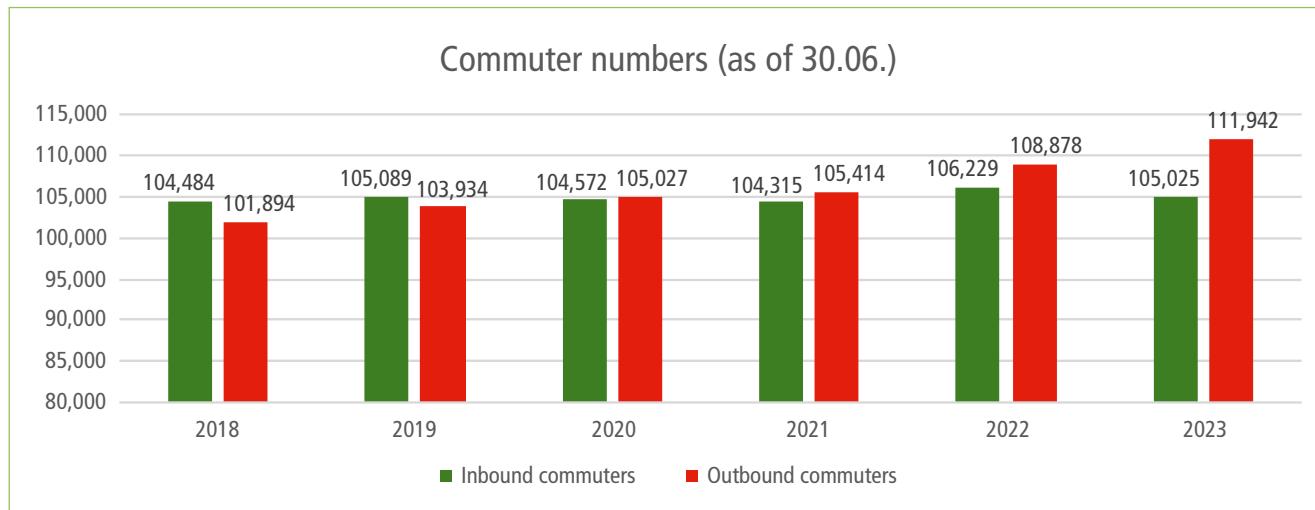


Figure 18: Absolute commuter numbers ¹⁸

Until 2019, commuter numbers rose steadily – both for people travelling into and out of the city. In 2020, the number of commuters travelling into the city fell slightly for the first time, while the number of commuters travelling out of the city continued to rise. Current data shows that this trend has intensified over the last two years: the number of people commuting out of the city reached a new high of 111,942, while the number of people commuting into the city stabilised at 105,025, showing only slight fluctuations compared to previous years.

2.5 Computer numbers of apprentices by industry

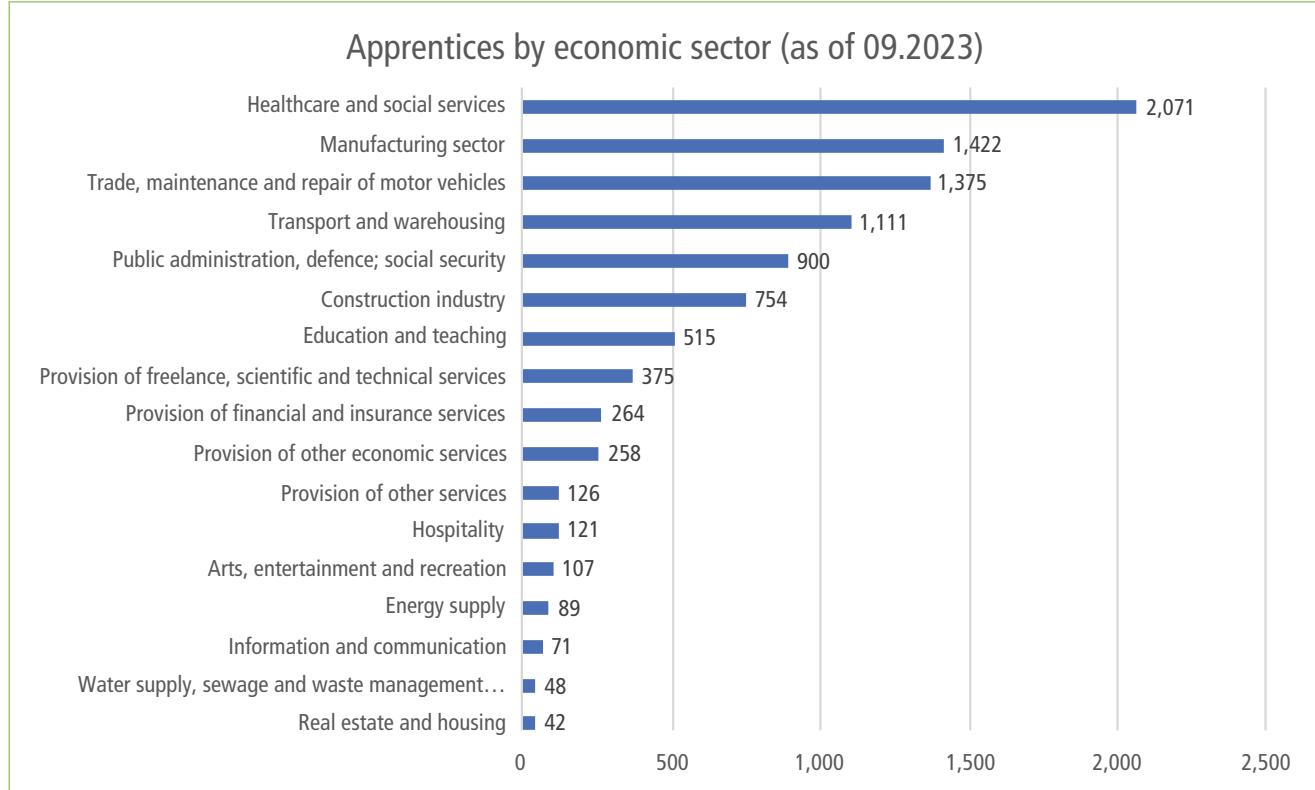


Figure 19: Number of apprentices by economic sector ¹⁹

18 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 06.2024

19 Source: Statistics of the Federal Employment Agency, as of: 09.2023

At the end of 2023, there were a total of 9,653 apprentices in Duisburg across all vocational training years. However, due to data anonymity, only 9,649 apprentices are shown in the figure above, as four people are assigned to the industries 'agriculture, forestry and fishing' and 'mining and quarrying'. Most apprentices worked in the 'health and social services' sector (2,071 people), followed by 'manufacturing' (1,422 trainees) and 'trade, maintenance and repair of motor vehicles' (1,375 apprentices). The smallest industries include – in addition to those that have been anonymised – 'real estate and housing' (42 apprentices) and 'water supply; sewage and waste disposal and the remediation of environmental pollution' (48 apprentices).

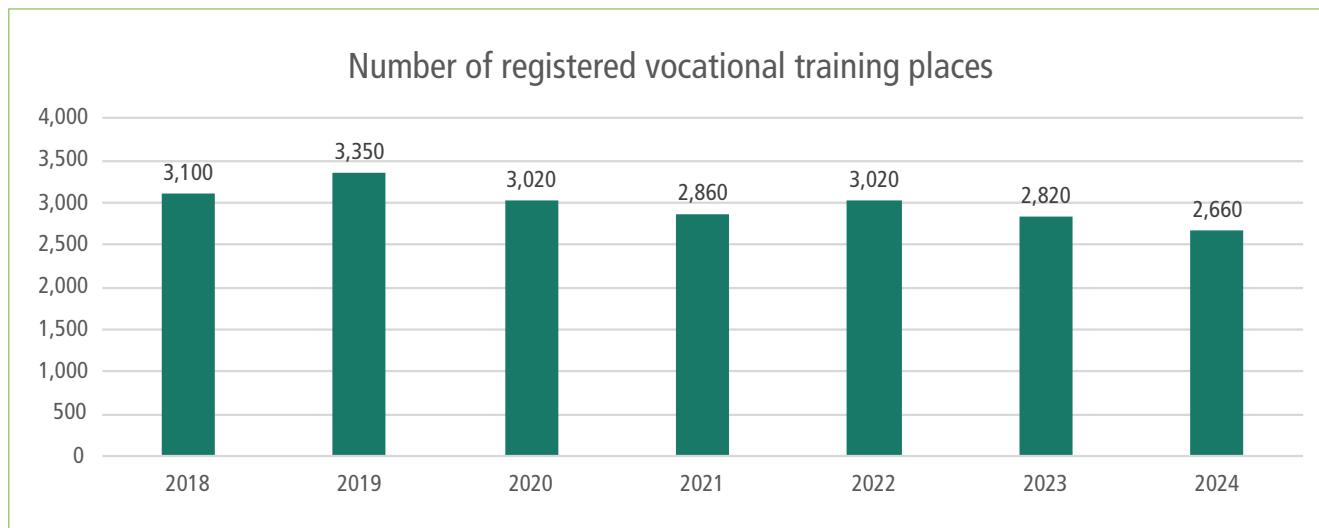


Figure 20: Number of registered vocational training places ²⁰



In recent years, the number of reported vocational training places has fluctuated slightly. In 2019, it peaked at 3,350 before falling to 2,860 jobs in 2021 due to the pandemic. With the end of the coronavirus measures, the number rose again to 3,020 in 2022. Most recently, 2,660 apprenticeship vacancies were reported in September 2024. It is important to note that this is the figure reported on a monthly basis. The figures listed below by economic sector refer to persons in vocational training, i.e. including those in their second and third years of training.

²⁰ Source: Statistics of the Federal Employment Agency, as of: 09.2024

Apprenticeship positions by economic sector

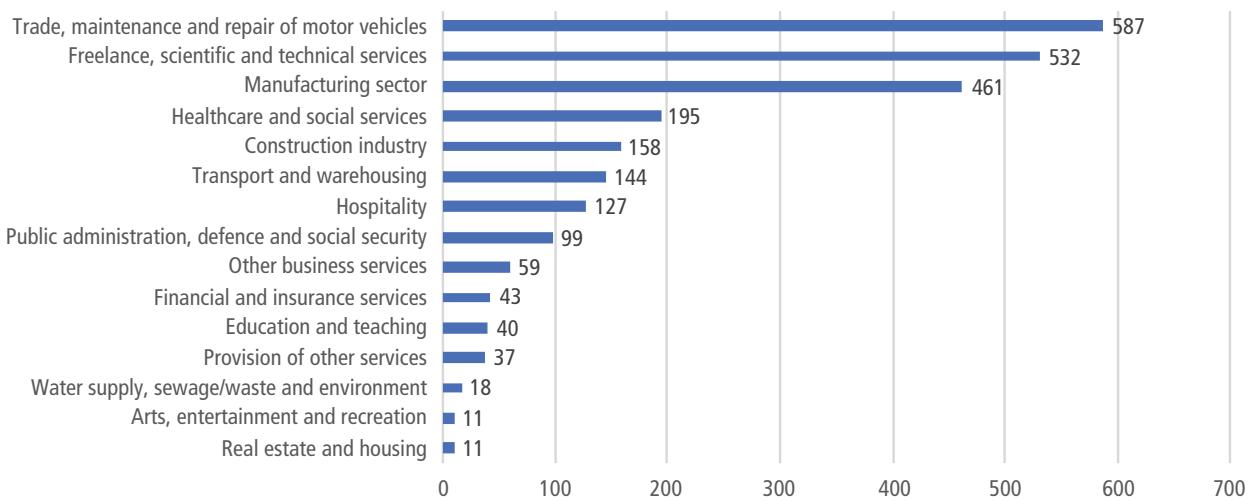


Figure 21: Number of apprentices by industries²¹

Change in vocational training places by economic sector compared with the previous year

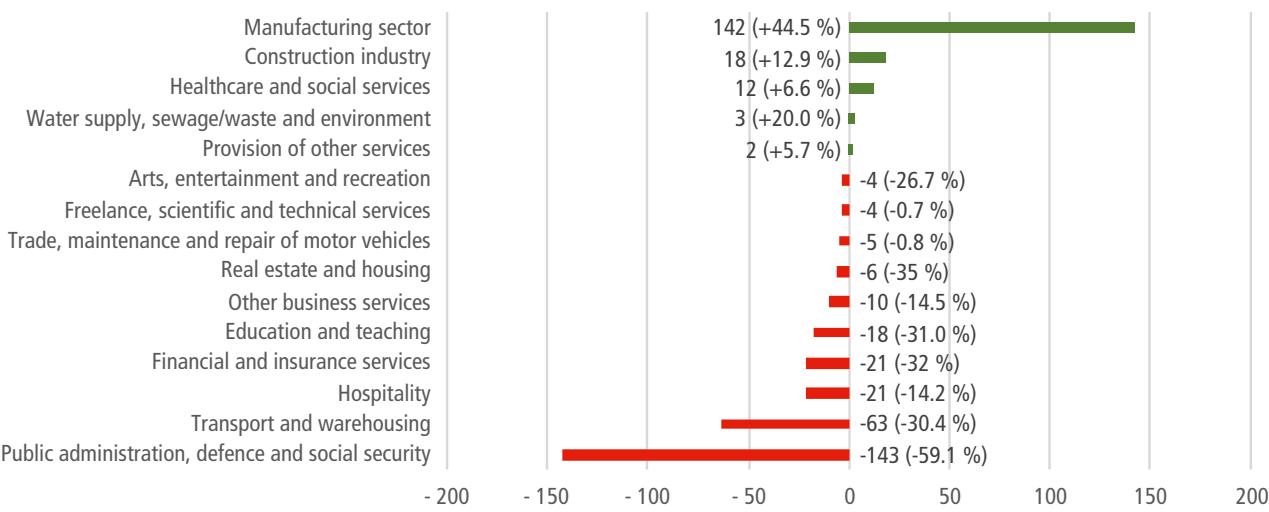


Figure 22: Absolute change in apprentices by sector compared with previous year²²

The graphs show the number of reported training places by economic sector and reveal clear differences between industries. The sector offering the most training places is 'Trade, maintenance and repair of motor vehicles' with 587 positions, followed by 'Freelance, scientific and technical services' with 532 positions. In third place is the 'manufacturing' industry with 461 positions, which recorded the largest increase compared to the previous year (+142 jobs). Industries with fewer training opportunities include 'education and teaching' (40 positions), 'water supply, sewage/waste and environment' (18 positions) and 'arts, entertainment and recreation' and 'real estate and housing' with 11 positions each. The sharpest decline compared to the previous year was recorded in 'public administration, defence and social security', which is offering 143 fewer training places.

21 Source: Statistics of the Federal Employment Agency, as of: 09.2024

22 Source: Statistics of the Federal Employment Agency, as of: 06.2024

3. Economy

3.1 Gross domestic product and gross value added

Traditionally, two different national account indicators are used to analyse and evaluate the performance of a business location: gross domestic product (GDP) and gross value added (GVA). GDP comprises the value of all goods and services that are generated in a given area in a year. GDP is measured at market prices and includes non-deductible taxes on products, but excludes intermediate consumption such as subsidies.²³ Gross value added at production prices for each sector of the economy is the gross value of production at production prices less intermediate consumption.²⁴ Thus, GDP represents gross added value plus taxes on goods and less the subsidies on goods.

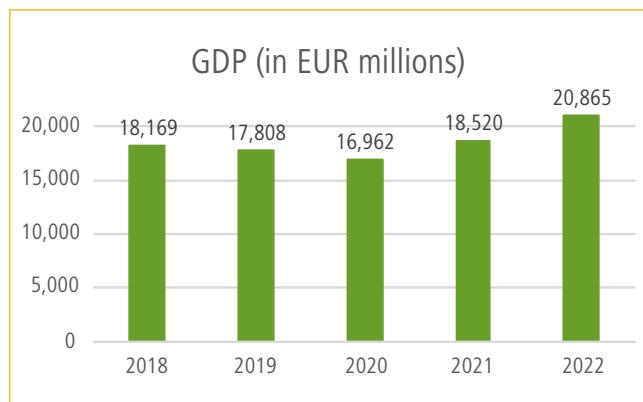


Figure 23: Gross domestic product of the city of Duisburg²⁵

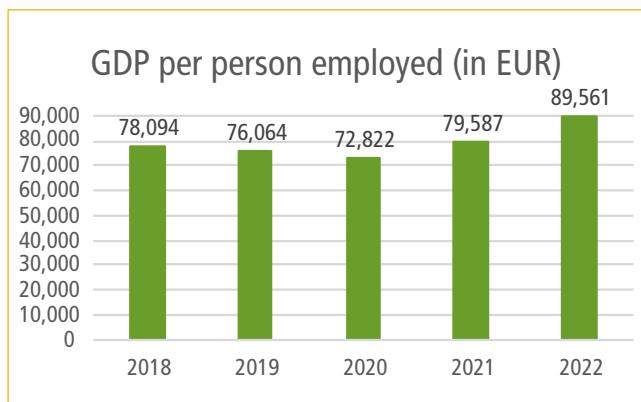


Figure 24: Gross domestic product per person employed²⁶

Even during the coronavirus pandemic, Duisburg's economy recovered in 2021 with a gross domestic product of EUR 18,520 million, reaching a new high of EUR 20,865 million in 2022. This corresponds to economic growth of over 12 % compared to the previous year. GDP per person in employment also rose significantly after the pandemic-related decline in both 2021 (EUR 79,587 per capita) and 2022 (EUR 89,561 per capita).

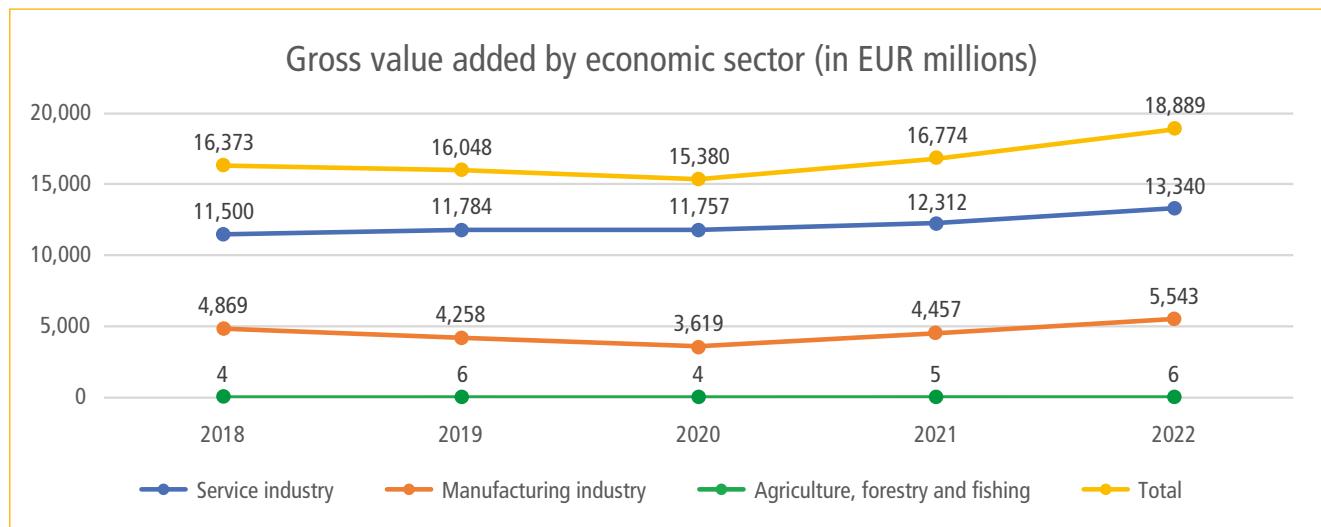


Figure 25: Development of gross value added²⁷

In 2022, gross value added in Duisburg totalled EUR 18,889 million, continuing the growth trend after the pandemic. Compared to the previous year, it rose by over EUR 2 billion. Over 70 % of gross value added was generated by the service industry (EUR 13,340 million), around 29 % by manufacturing (EUR 5,543 million), while agriculture,

23 Source: Gabler Business Wirtschaftslexikon: <https://wirtschaftslexikon.gabler.de/definition/bruttoinlandsprodukt-bip-27867>, as of 09.2024

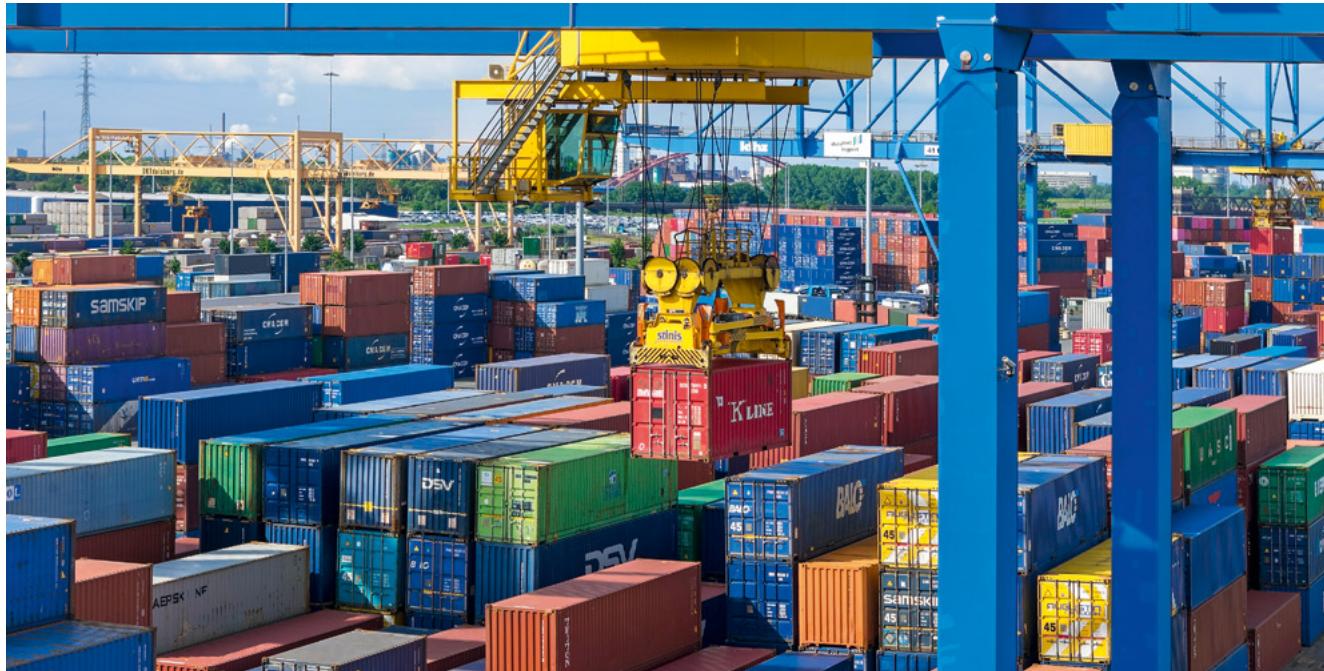
24 Source: BWL-Lexikon: <https://www.bwl-lexikon.de/wiki/bruttowertschöpfung/>, as of 09.2024

25 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

26 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

27 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 09.2024

forestry and fishing accounted for 0.03 % with EUR 6 million. In addition to trade, warehousing and hospitality, the service industry also includes financial and insurance services.



3.2 Disposable income

In national accounts, a distinction is made between the disposable income of an entire economy and the disposable income of private households. Disposable income is the total value of income earned by companies and private households, minus taxes and social security contributions, plus government subsidies and social benefits. The disposable income of private households remains as household income after deduction of social security contributions and taxes.²⁸

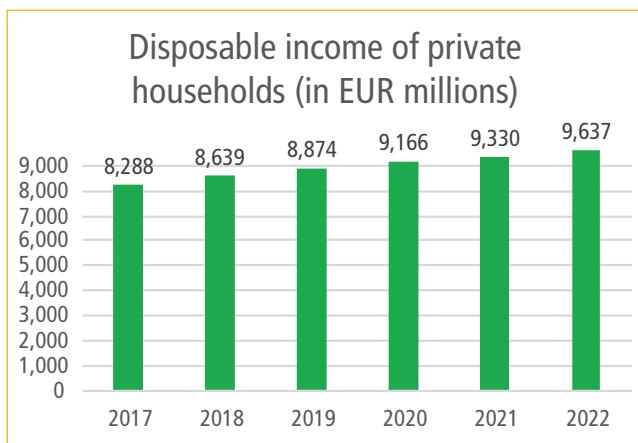


Figure 26: Disposable income of private households²⁹

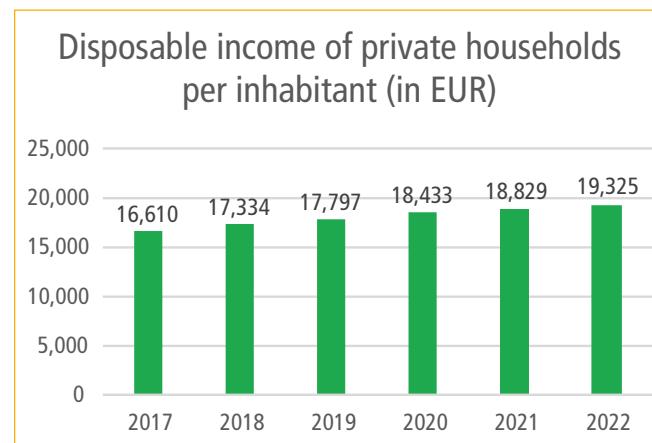


Figure 27: Disposable income per resident³⁰

Disposable income rose steadily throughout the period under review. In 2017, the disposable income of private households in Duisburg amounted to around EUR 8.2 billion, which corresponded to an income per inhabitant of EUR 16,610. In 2020, disposable income of private households exceeded EUR 9 billion for the first time. This level was maintained and further increased in the following years 2021 and 2022 despite the coronavirus pandemic. With disposable income of EUR 9,637 billion in 2022, each inhabitant had an average of EUR 19,325 at their disposal for the first time.

28 Source: Bundeszentrale für politische Bildung: <https://www.bpb.de/kurz-knapp/lexika/lexikon-der-wirtschaft/20977/verfuegbares-einkommen/>, as of 11.2024

29 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 11.2024

30 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 11.2024

3.3 Corporate structure

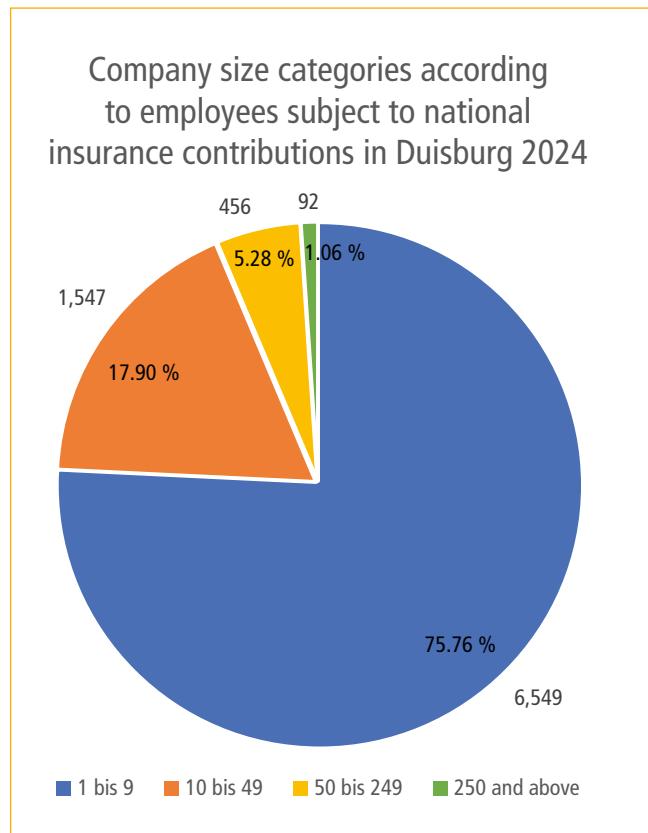


Figure 28: Company sizes according to employees subject to national insurance contributions in Duisburg in 2024 ³¹

There are a total of 8,644 businesses in Duisburg that employ at least one person who is subject to national insurance contributions. The size of businesses is classified according to the number of employees subject to national insurance contributions. The largest share, over 75 %, is accounted for by companies with 1 to 9 employees subject to national insurance contributions, which corresponds to 6,549 companies. 1,547 companies employ between 10 and 49 employees subject to national insurance contributions, which accounts for over 17 % of the total. Around 5 %, or 456 companies, employ between 50 and 249 employees subject to national insurance contributions. 92 companies, approximately 1 %, employ more than 250 employees subject to national insurance contributions. This means that Duisburg is exactly average in terms of company size, both in comparison to North Rhine-Westphalia and to the Ruhr region.



31 Source: Statistics of the Federal Employment Agency, as of: 06.2024

3.4 Number of business registrations

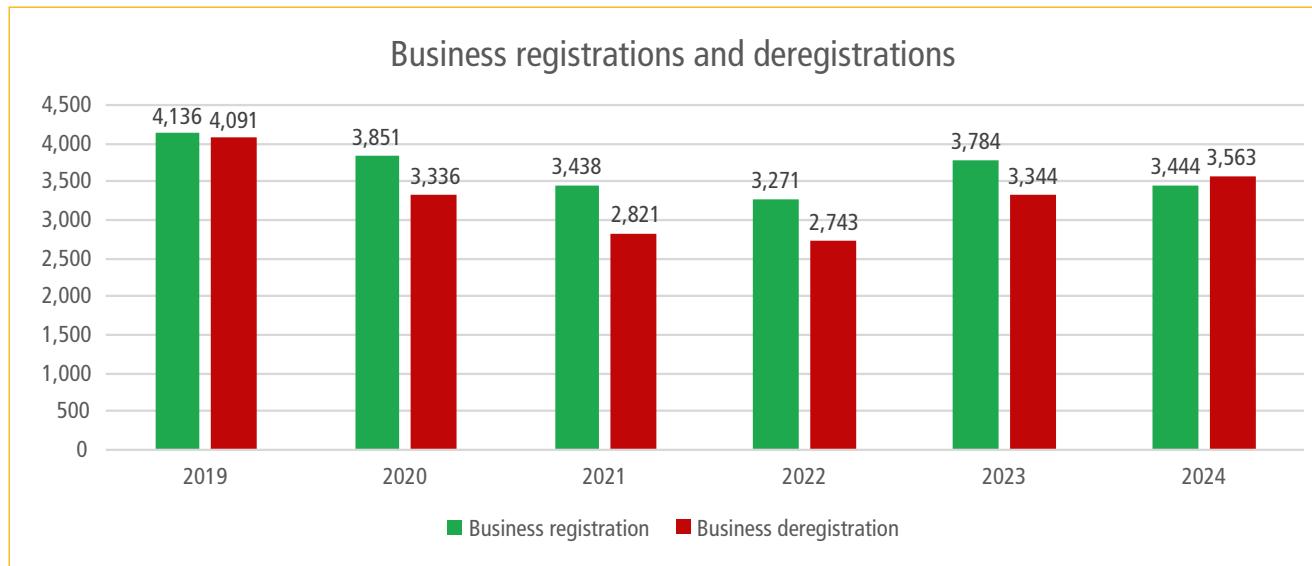


Figure 29: Business registrations and deregistrations ³²

The balance of business registrations in Duisburg was positive in the observation period from 2019 to 2023 and rose significantly since 2020. This means that there were more business registrations than deregistrations throughout the period. This enabled the city of Duisburg to attract and retain businesses in the long term. Although almost 400 fewer business registrations were recorded in 2023 than in 2019, the number of business deregistrations fell by around 400 in the same period. In contrast, there were 3,444 registrations and 3,563 deregistrations in 2024. For the first time, more businesses were deregistered than registered.



³² Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 12.2024

Business registrations and deregistrations by industry in 2024

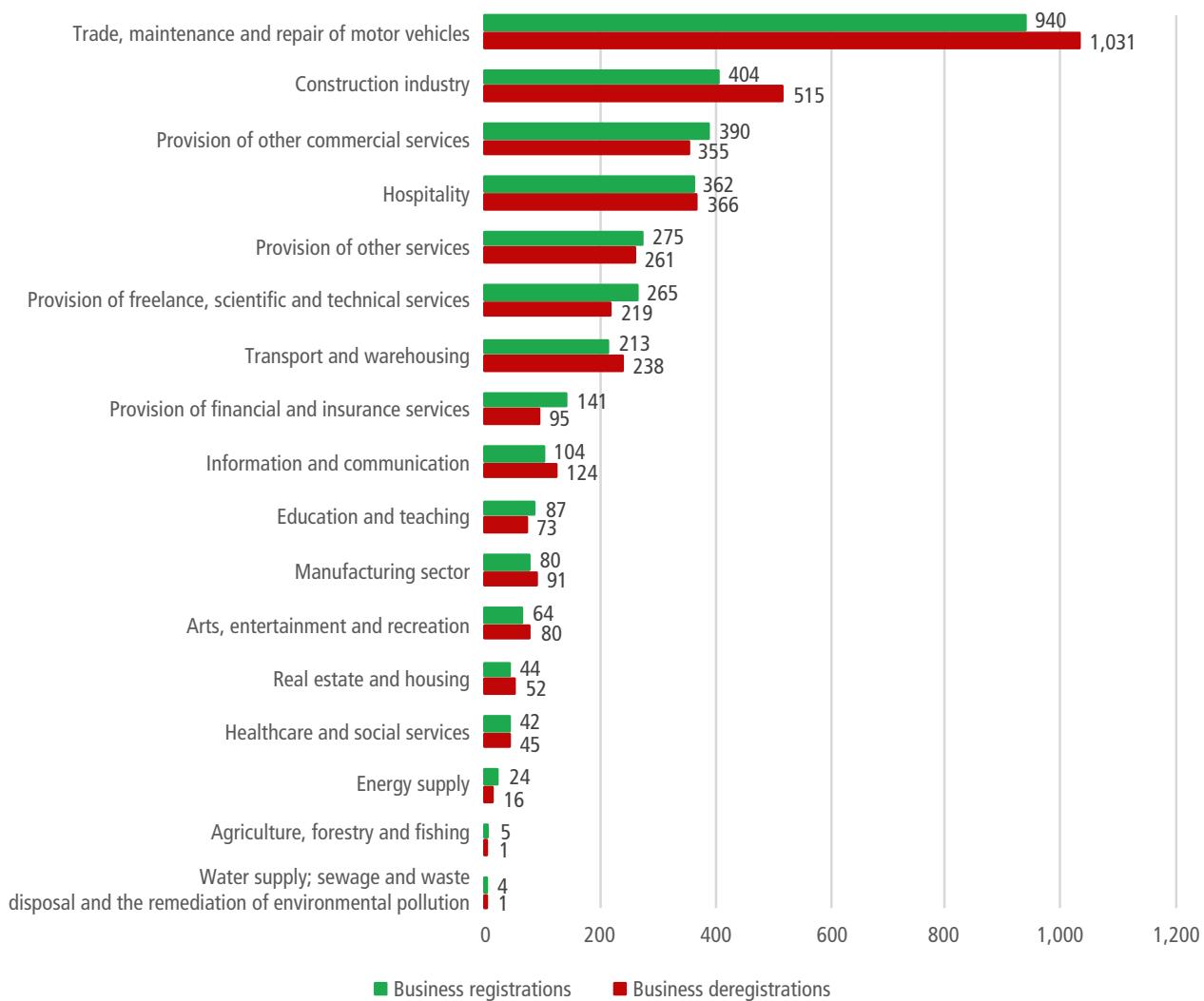


Figure 30: Business registrations and deregistrations by industry in 2024 ³³

In 2024, the majority of business registrations were in the economic segment 'Trade, maintenance and repair of motor vehicles'. In this segment, 940 new businesses were registered. At the same time, this industry also recorded the highest number of business deregistrations: 1,031 companies ceased trading. By contrast, the 'construction' sector recorded the highest negative balance. Here, 404 new businesses were registered, while 515 deregistrations were recorded.

3.5 Integrative power of the business location

Until 2022, the trend in business registrations and deregistrations by owners with a migrant background was similar to the overall trend in Duisburg as a business location. Throughout the entire observation period, more businesses were registered than deregistered each year. From 2019 onwards, the balance rose slightly but steadily. Since 2020, this figure has remained stable at over 200. A particularly sharp increase was recorded in 2023: the balance of business registrations more than doubled compared to 2022. While the balance was still at 320 in 2022, it reached 741 in 2023. This highlights the long-term commitment of business owners with a migrant background to Duisburg as a location.

³³ Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 12.2024

Registration and deregistration of owners with a migration background

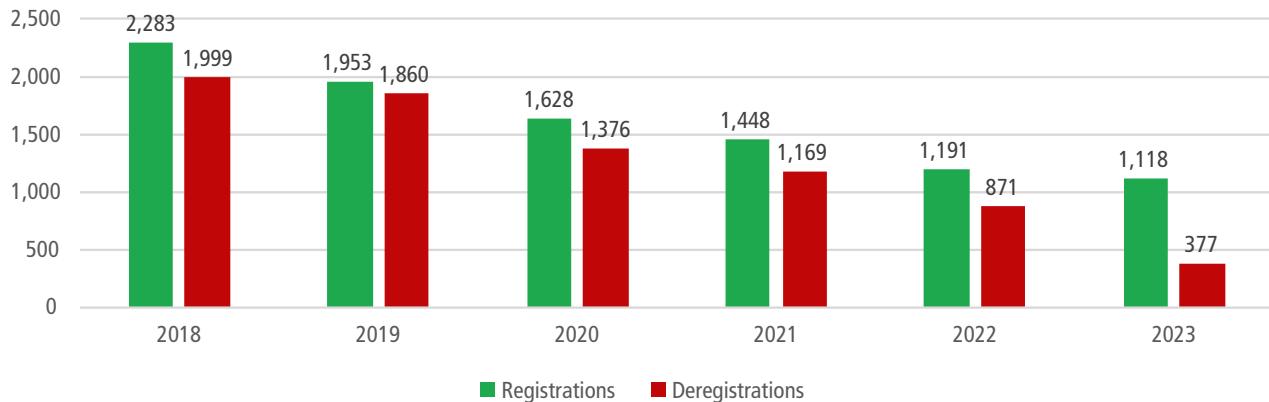


Figure 31: Registrations and deregistrations of owners with a migration background³⁴

Employees subject to national insurance contributions with a migrant background (as of 30.09.)

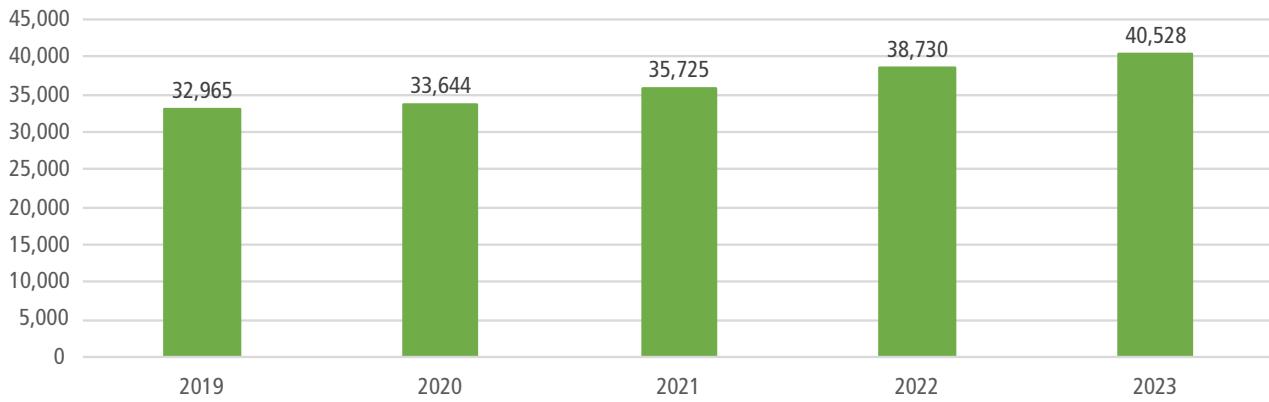


Figure 32: Employees subject to national insurance contributions with a migration background³⁵

In 2019, 32,965 employees subject to national insurance contributions with a migrant background were employed in Duisburg. This corresponds to around 22 % of all employees subject to national insurance contributions in Duisburg. In the years that followed, the number of employees subject to national insurance contributions with a migrant background rose steadily, mainly due to refugees from Syria and Ukraine. In 2023, 40,528 employees subject to national insurance contributions with a migrant background were employed in Duisburg. This meant that their share in that year was around 27 %.

3.6 Investments by municipalities and companies

The City of Duisburg is an ideal location for investors and visionaries. Well-organised business networks, a trimodal transport infrastructure and an energy infrastructure that is ideal for industrial production form the framework for Duisburg as a business location. Thanks to funding programmes and municipal investment, flagship projects have already been implemented in the urban area in recent years.

34 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

35 Source: City of Duisburg, as of: 09.2024

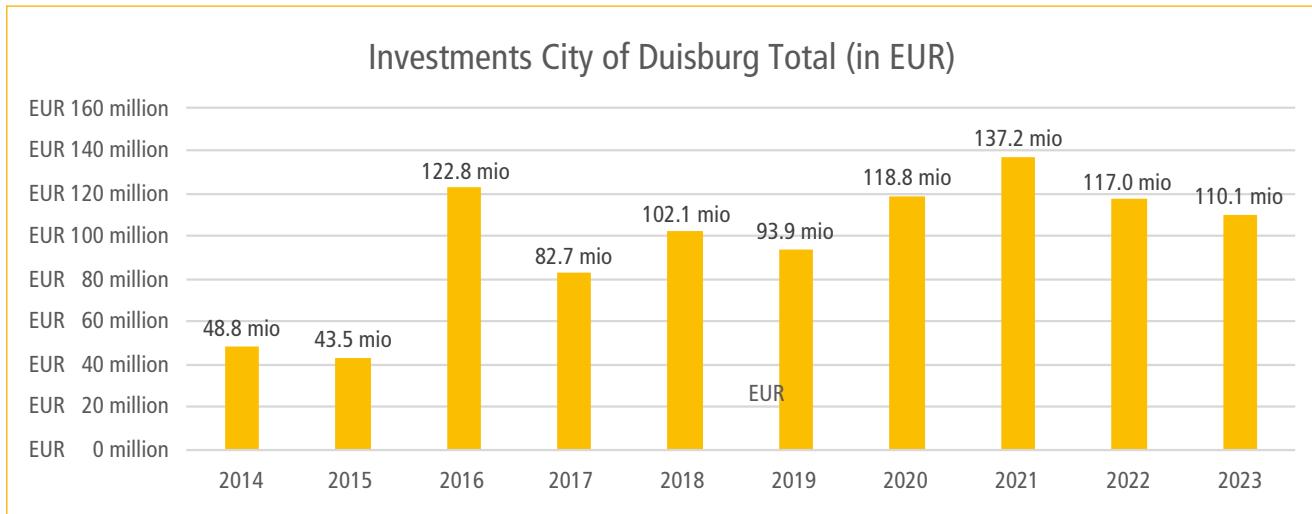


Figure 33: Total investments by the City of Duisburg ³⁶

In 2023, the City of Duisburg made investments totalling over EUR 110 million. This corresponds to a reduction of just under EUR 7 million compared to the previous year. The biggest change in the investment sum was recorded in 2016, with an increase of over EUR 79 million compared to the previous year.

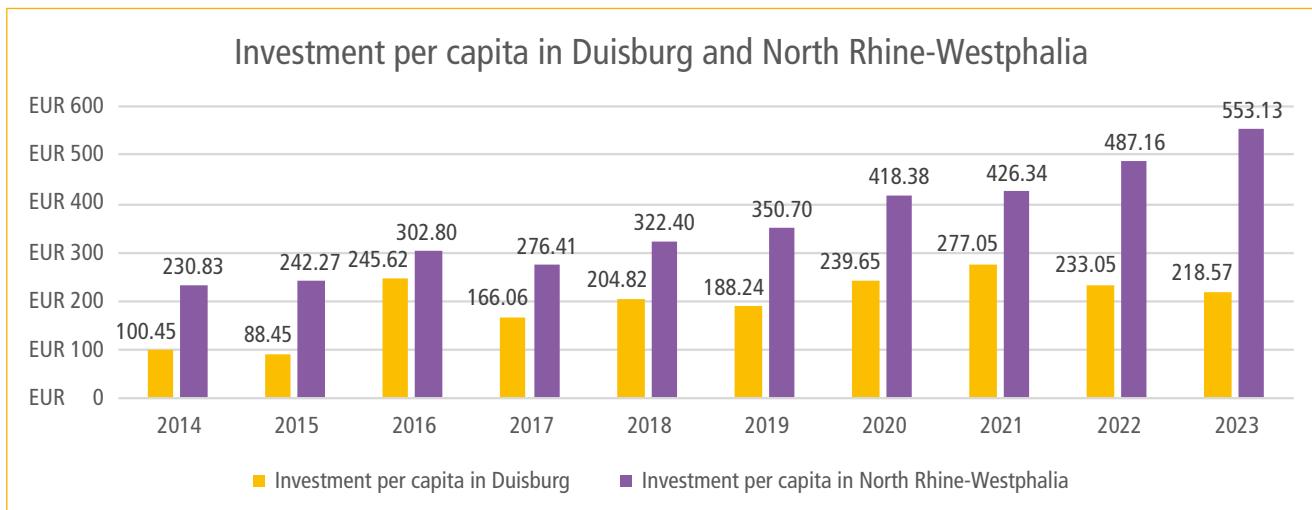


Figure 34: Investment per capita in Duisburg and North Rhine-Westphalia ³⁷

In 2023, the City of Duisburg invested an average of EUR 219.22 per inhabitant. In comparison, the figure for North Rhine-Westphalia was significantly higher at EUR 553.13 per inhabitant. A particularly sharp rise in investment was recorded in Duisburg in 2016, when investment rose by EUR 156.38 per inhabitant compared with the previous year.

It should be noted that the level of investment may vary depending on the size of the municipality, its financial situation and demographic structure. While the figures for Duisburg are based on the city's population, the figures for North Rhine-Westphalia are based on the total population of the state. Structural differences – for example, in terms of tax revenue or the distribution of subsidies – can affect comparability.

36 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 11.2024

37 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 11.2024

3.7 Trade tax and property tax

Trade tax and property tax are among the most lucrative sources of income for local authorities. As municipal taxes, the revenue is generally allocated to the municipalities, with part of the trade tax being transferred to the federal government and the states. The respective assessment rate is decisive for the calculation of both taxes. This is determined by the local authority for both business and property tax purposes. The higher the tax rate, the greater the tax burden on the taxpayer. Trade tax is payable by businesses that maintain a permanent establishment in Germany. Owners of real estate are liable for property tax.

Since the rates can vary considerably from municipality to municipality within a region, they represent a competitive location factor.

The tax burden on taxpayers in Duisburg has been above average in recent years, with a trade tax rate of 520 % and a property tax rate (B) of 855 %. This was intended to balance budget deficits as part of budget consolidation and meet the requirements for receiving consolidation aid from the state of North Rhine-Westphalia. In the long term, high tax rates can have a negative impact on the local economy if local companies relocate, in order to reduce their costs or if the establishment of new companies is hindered as a result. A high property tax rate also increases the housing costs of many citizens, as property tax is not only paid by property owners but can also be passed on to tenants as part of their utility bills. Following the end of Duisburg's excessive indebtedness with the 2022 annual financial statements, the City Council has decided to reduce the trade tax rate to 515 % and the property tax rate B to 845 % from 2023 onwards. If the economic situation continues to develop positively, tax cuts will be continued in order to provide lasting relief for businesses and the city's residents. In addition, the City Council has decided that a reduction plan will be drawn up to lower property tax and trade tax in Duisburg in the long term. In 2022, the Council decided that the city's economic performance allowed for a continuous reduction in the tax rate. Therefore, a gradual reduction in the tax rate was decided, which was lowered by five per cent to 515 % in 2023. Reductions of ten percentage points are planned for 2024 and 2025, resulting in a tax rate of 495 % in 2025.

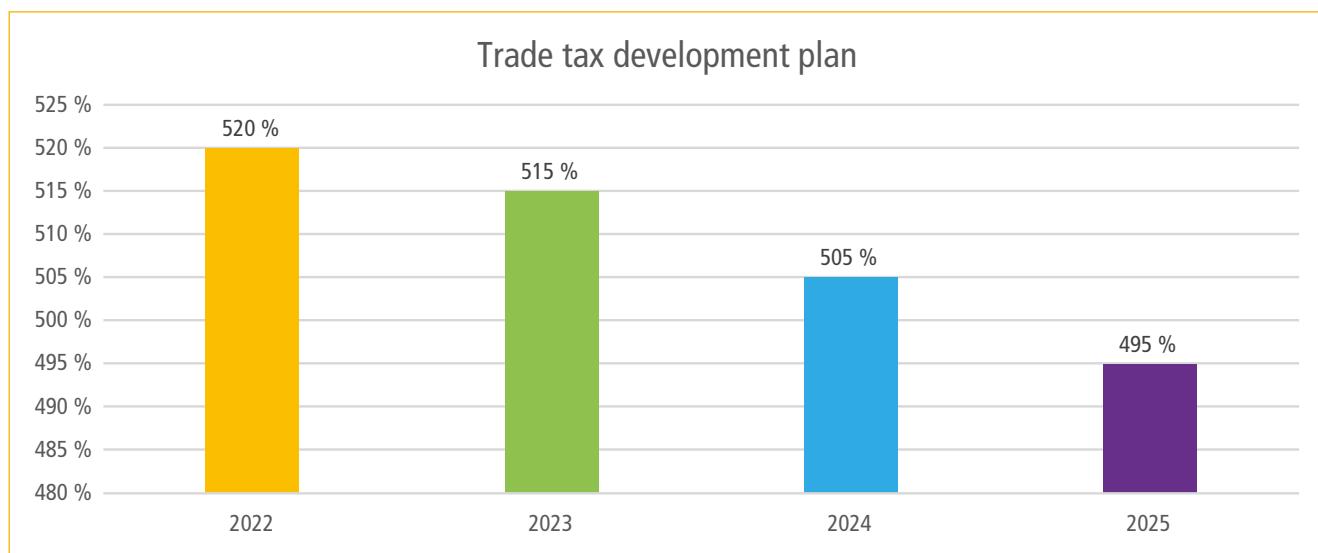


Figure 35: Development plan for trade tax ³⁸

| Neighbouring towns and the Ruhr area | |
|--------------------------------------|--------------|
| Oberhausen | 580 % |
| Mülheim an der Ruhr | 580 % |
| Recklinghausen district | 520 % |
| Rheinberg | 520 % |
| Herne | 500 % |
| Bochum | 495 % |
| Moers | 495 % |
| Duisburg | 495 % |
| Bottrop | 490 % |
| Dortmund | 485 % |
| Unna district | 481 % |
| Gelsenkirchen | 480 % |
| Essen | 480 % |
| Krefeld | 480 % |
| Wesel district | 468 % |
| Hamm | 465 % |
| Dinslaken | 460 % |
| Meerbusch | 450 % |
| Düsseldorf | 440 % |
| Ratingen | 410 % |
| ø Assessment rate | 489 % |

Table 1: Trade tax assessment rates in the Duisburg area

Compared to neighbouring cities, Duisburg will have the fourth-highest trade tax rate in 2025, alongside Bochum and Moers. Only Oberhausen and Mülheim an der Ruhr, with 580 %, and the district of Recklinghausen and Rheinberg, with 520 %, have a higher assessment rate. With a reduction of 10 % in 2025, Duisburg will be 6 % above the average assessment rate of neighbouring cities and closer to the assessment rates of Moers and Krefeld.

3.8 Rent index and property market

The real estate market in Duisburg is undergoing change: newly planned districts and neighbourhoods are laying the foundations for new developments and a dynamic real estate market where rents remain moderate.

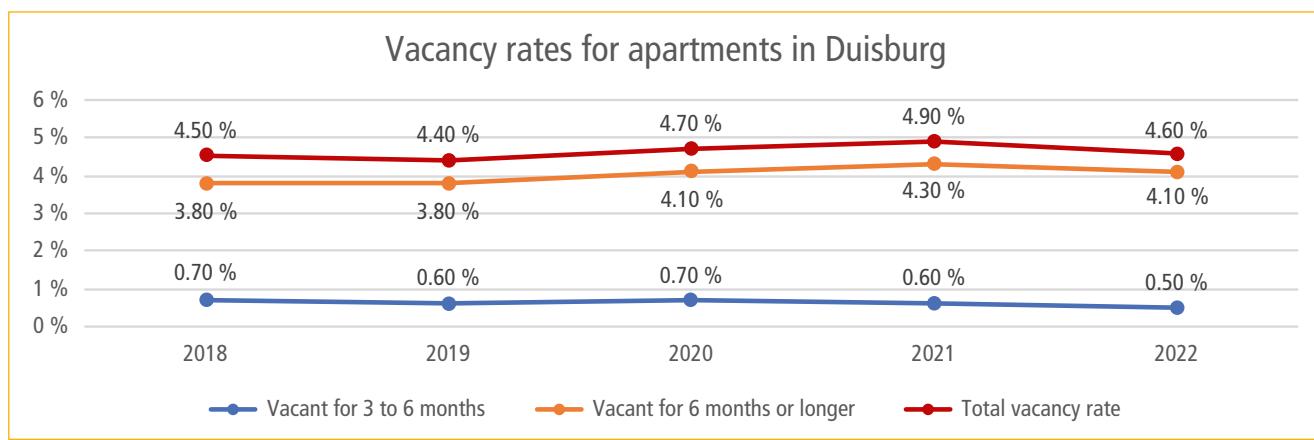


Figure 36: Vacancy rate for apartments ³⁹

39 Source: City of Duisburg, 12.2024



The vacancy rate in Duisburg remained virtually unchanged between 2018 and 2022. In 2018, 4.5 % of apartments in Duisburg were vacant. In 3.8 % of Duisburg's apartments, the vacancy lasted at least 6 months. In comparison, the vacancy rate in 2022 was slightly higher than in 2018 at 4.6 %, but lower than in the previous year 2021. 4.1 % of Duisburg's apartments were unlet for at least 6 months in 2022.⁴⁰

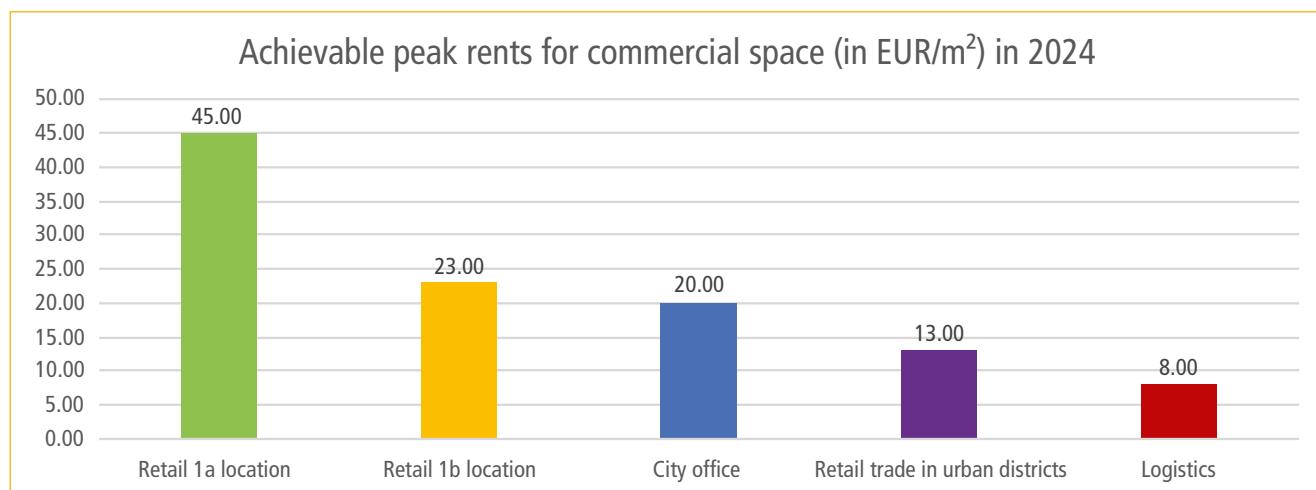


Figure 37: Achievable peak rent by type of use⁴¹

Peak rents in the commercial property sector can provide information about the attractiveness of a business location. If a location becomes more popular, the cost of commercial space there usually goes up too. In the long term, other public services will also benefit from efficient land development, as the municipal revenue generated can be reinvested elsewhere. In Duisburg, the highest rents per square metre were achieved in the best-located retail spaces, at EUR 45. This was almost twice as high as rental space classified in category 1b (EUR 23). Office space in the city centre reached maximum prices of EUR 20. Away from the centre, however, retail rents were significantly lower at EUR 13. Logistics has the lowest rental price in the categories shown, at EUR 8 per square metre. The real estate market report published twice a year by Duisburg Business & Innovation provides a detailed overview of the real estate industry in the Duisburg metropolitan area.

40 Source: Duisburg Immobilienmarktbericht 2024: https://www.duisburg-business.de/fileadmin/duisburg-business/Downloads/Immobilienmarktbericht_2024/ly_db1_immobiliensmarktbericht_030325.pdf, (duisburg-business.de)

41 Source: Business Metropole Ruhr: <https://www.buisness.ruhr>, as of 12.2024

4. Education

4.1 Overview of schools and number of pupils

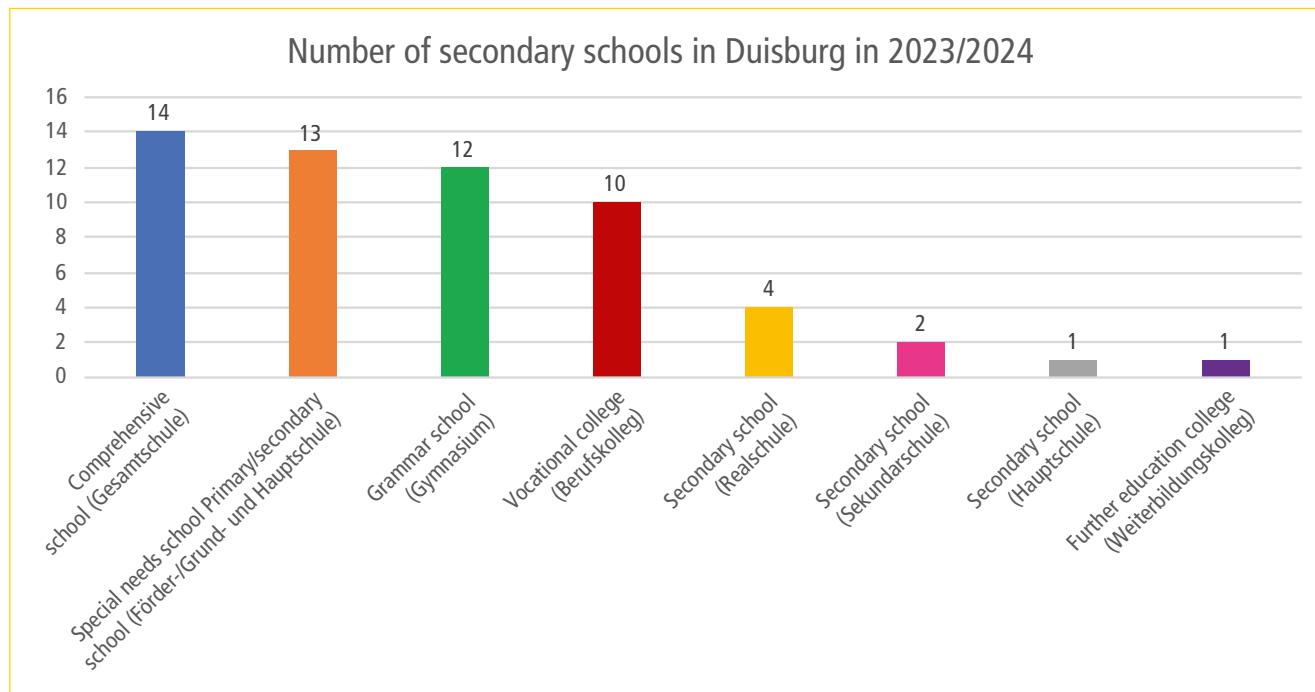


Figure 38: Secondary schools in Duisburg ⁴²

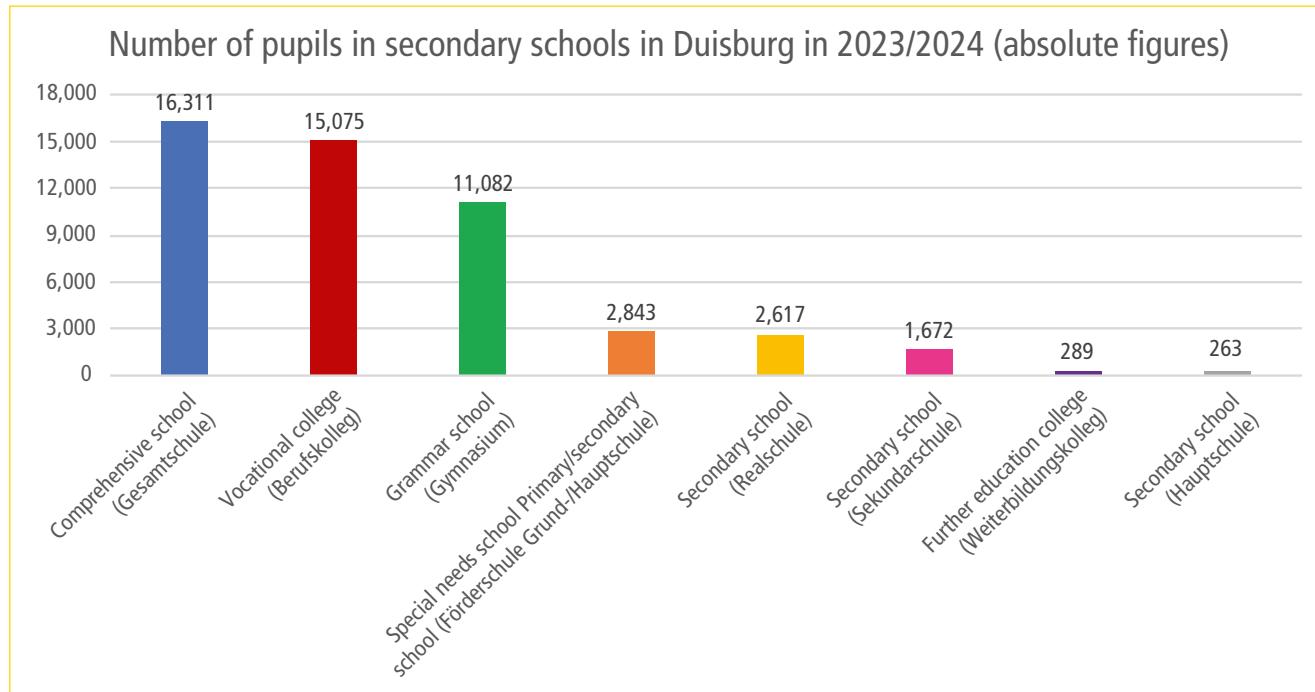


Figure 39: Number of pupils in secondary schools in Duisburg in 2023/2024 in absolute terms ⁴³

In the 2023/2024 school year, there were a total of 133 schools with 70,899 pupils in the Duisburg city area. The schools included 76 primary schools, which taught over 20,000 pupils at primary level. Secondary education comprised 46 secondary schools with a total of around 50,000 pupils. Of these, 16,311 pupils (32.52 %) attended one of the 14 comprehensive schools (Gesamtschulen) in Duisburg. A total of 11,082 pupils (22.10 %) were enrolled at

42 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

43 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

the twelve grammar schools (Gymnasien). The four secondary schools (Realschulen) reported 2,617 pupils (5.22 %), while the two secondary schools (Sekundarschulen) were attended by 1,672 pupils (3.33 %). The secondary school (Hauptschule) in the Walsum district had only 263 pupils (0.52 %), while the further education college (Weiterbildungskolleg) was attended by 289 pupils (0.58 %). 2,843 pupils (5.67 %) attended one of the 13 special needs schools (Förderschulen). In addition, 15,075 pupils (30.06 %) were enrolled in one of the ten vocational colleges (Berufskolleg) to complete vocational training, further or continuing education.



4.2 Statistics on educational attainment

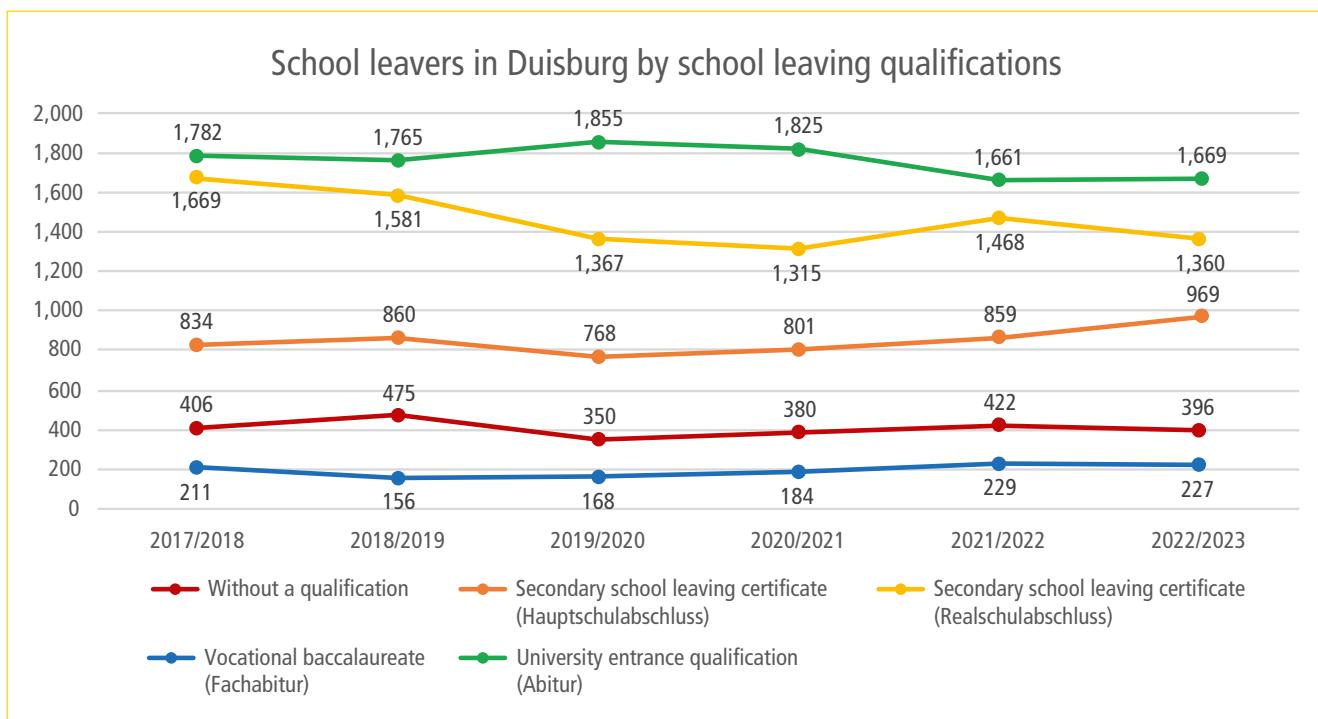


Figure 40: School leavers by qualification ⁴⁴

44 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

In the 2022/2023 school year, Duisburg schools recorded a total of 4,621 school leavers. Although the number of high school graduates has fallen compared to previous years, at 1,669 they still accounted for more than a third (36.12 %) of all school leavers. A total of 1,360 pupils (29.43 %) obtained a secondary school leaving certificate (Realschulabschluss), which represents a decline compared with the previous year. 969 pupils (20.97 %) completed their schooling with a secondary school leaving certificate (Hauptschulabschluss), while 227 school leavers (4.91 %) obtained a technical college entrance qualification (Fachhochschulreife). The number of school leavers without qualifications in the 2022/2023 school year was 396, which corresponds to a proportion of 8.57 %. A total of 3,652 school leavers obtained a school leaving certificate and are now available to Duisburg as potential skilled workers – either for vocational training or university studies in the region.

4.3 Childcare

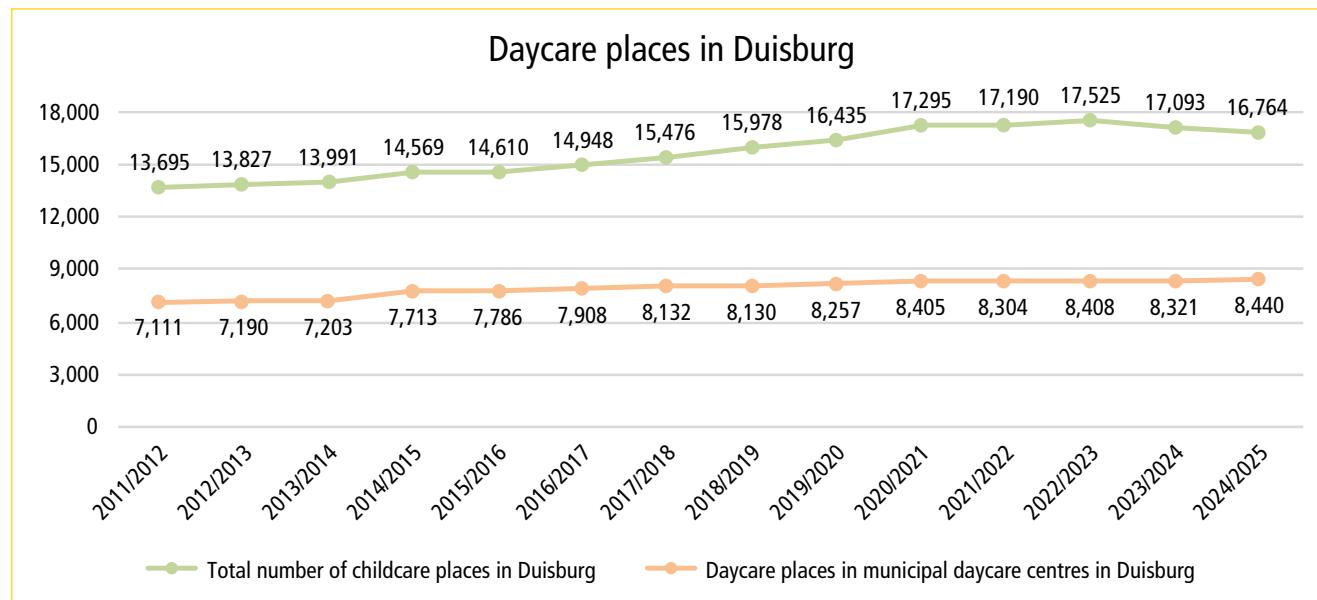


Figure 41: Number of daycare places⁴⁵



45 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

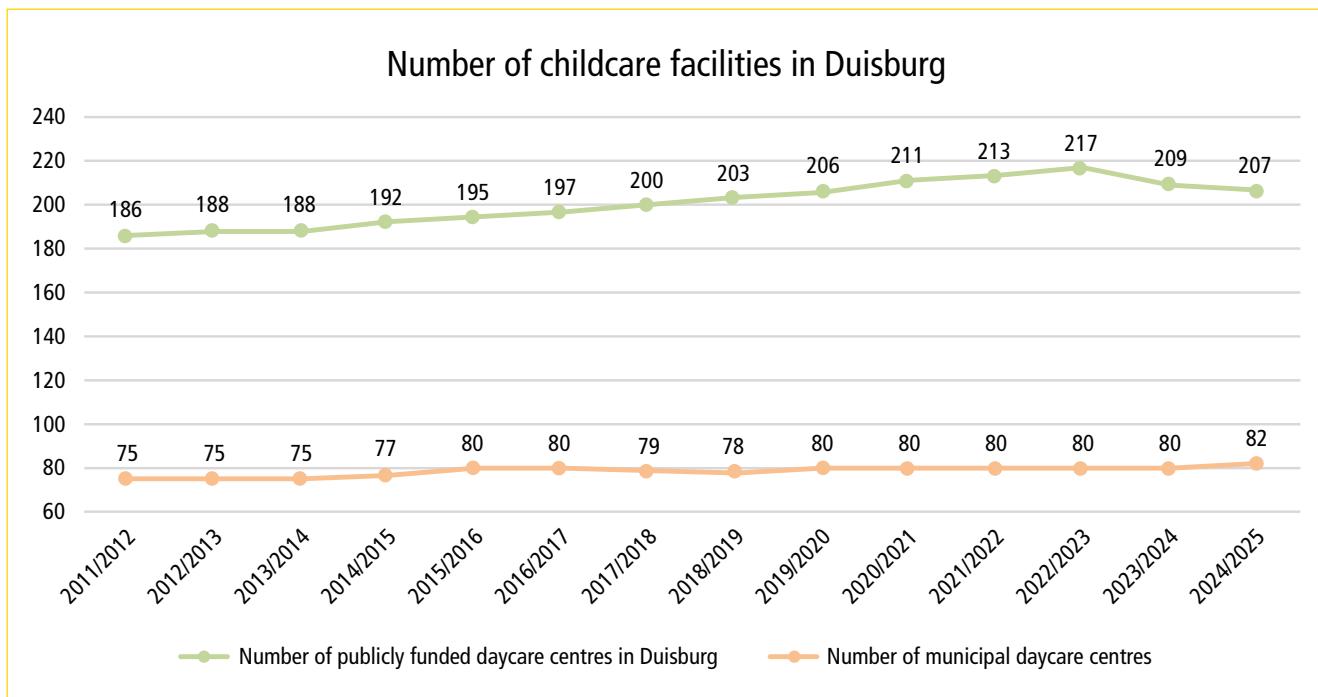


Figure 42: Number of childcare facilities⁴⁶

Since the 2019/2020 kindergarten year, the city of Duisburg has continuously offered more than 16,000 childcare places, around 8,300 of which are run by the city. The number of publicly funded childcare centres has remained at least 200 since the 2017/2018 kindergarten year. Throughout the entire period under review, the number of municipal childcare centres fluctuated between 75 and 82 facilities. In the 2024/2025 kindergarten year, a total of 16,764 places will be available in the 207 publicly funded daycare centres in Duisburg.

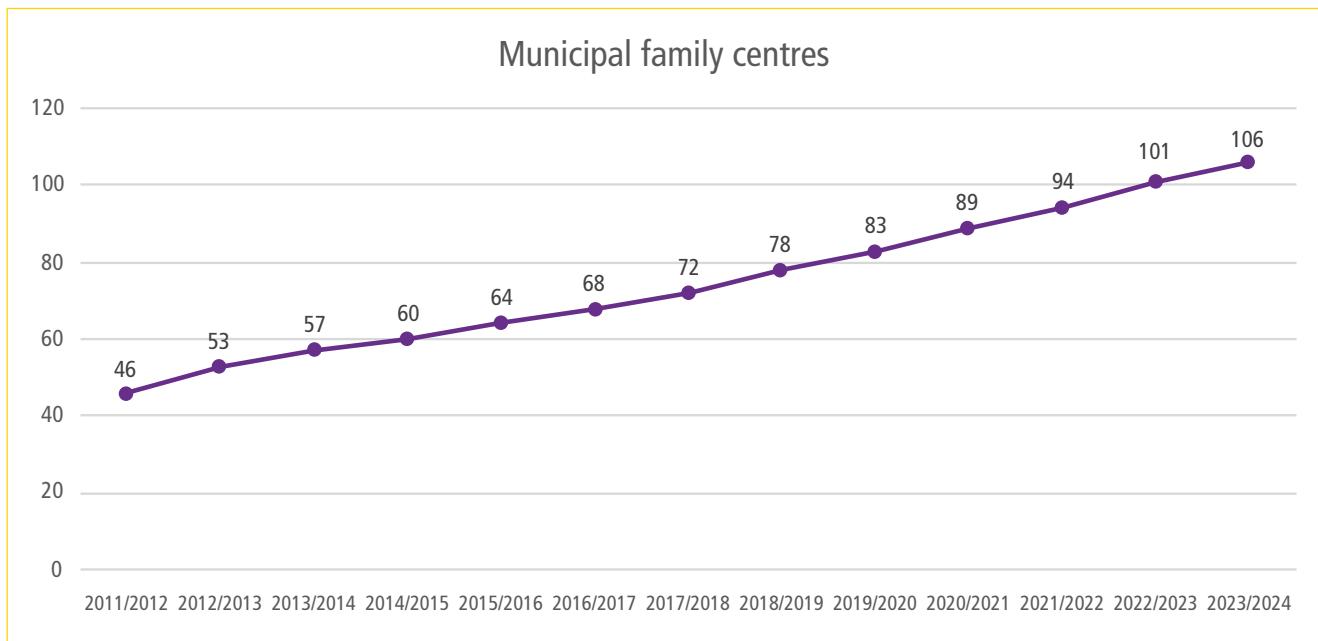


Figure 43: Municipal family centre⁴⁷

46 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

47 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 10.2024

Some of Duisburg's childcare facilities are certified as family centres and offer social space-oriented support services for children and families. The number of family centres has more than doubled since the 2011/2012 kindergarten year – from 46 to 106 in 2023/2024, which corresponds to an increase of five facilities compared to the previous year. In addition to the family centres, there are currently three family primary school centres funded by the state of North Rhine-Westphalia. They provide targeted support to parents in their parenting and help improve the educational opportunities of children from socially disadvantaged families. Another well-established offering is the "Stadt-randerholung" (city break), which took place for the 72nd time in 2024. At 15 locations throughout the city, children up to the age of 13 can enjoy supervised leisure activities including games, sports and excursions during the summer holidays. Open child and youth work also plays an important role. Youth centres, open meeting places and adventure playgrounds are available to young people aged between 6 and 27. In addition to leisure and educational activities, there are counselling services for families and cultural events such as summer festivals and concerts, which enrich social life in the neighbourhoods.



5. Research

5.1 List of universities and research institutes

The image transformation of the Ruhr region from an industrial location to a knowledge region is in full swing, and the higher education landscape of the Ruhr metropolitan region is already one of the densest in Europe. This ongoing structural change also emphasises the importance of Duisburg as a centre of science and has a positive effect on the expansion and promotion of scientific institutions.

The following universities and colleges are located in Duisburg:

- University of Duisburg-Essen, Duisburg Campus
- FOM, university location Duisburg
- University of Applied Sciences for Police and Public Administration (HSPV)
- Folkwang University of the Arts

In addition, Duisburg has a total of 15 research institutes as part of its knowledge infrastructure:

- Centre for Nanointegration (CENIDE)
- DST Development Centre for Marine Technology and Transport Systems e. V.
- Duisburg Institute for Language and Social Research e. V.
- FEhS Institute for Building Materials Research e. V.
- Fraunhofer inHaus Centre
- Fraunhofer Institute for Microelectronic Circuits and Systems
- FGW Research Institute for Social Development (registered association [e. V. i. L.])
- Institute for Energy and Environmental Technology
- Nano Energy Technology Centre (NETZ)
- Rhine-Ruhr Institute for Social Research and Policy Advice
- Salzgitter Mannesmann Research GmbH (steel research)
- Social Science Survey Centre GmbH
- ZBT Centre for Fuel Cell Technology
- Centre for Semiconductor Technology and Optoelectronics
- ZaKl.D – Centre for Applied Artificial Intelligence Duisburg

In addition, a new research institute is currently in its start-up phase:

- TrHy – THE HYDROGEN PROVING AREA

5.2 Student numbers

The wide range of courses and subjects offered at the four universities attracts a large number of students to the city. A total of over 18,000 people are currently studying in Duisburg, distributed among the universities as follows:

The University of Duisburg-Essen had 38,018 students enrolled in 74 degree programmes in the 2023/2024 winter semester, 12,975 of whom were at the Duisburg campus.⁴⁸

In the winter semester of 2024/2025, 132 students were enrolled in four degree programmes at the Folkwang University of the Arts in Duisburg.⁴⁹

The University of Applied Sciences for Police and Public Administration in North Rhine-Westphalia (HSPV) is decentralised, with nine locations across North Rhine-Westphalia. There are currently 3,500 students enrolled at the Duisburg campus, who can choose from five bachelor's degree programmes.⁵⁰

The FOM University Centre in Duisburg-Neudorf is one of 19 study locations in North Rhine-Westphalia. The Duisburg campus currently has 330 students and offers twelve bachelor's degree programmes.⁵¹

International students are also represented at Duisburg's universities. At the University of Duisburg-Essen, they account for around one-third of the total student population, with 4,495 students. At the Folkwang University of the Arts in Duisburg, 108 of the 132 students are international – a proportion of over 80%.



48 Source: University of Duisburg-Essen, as of 11.2024

49 Source: Folkwang University of the Arts, as of 11.2024

50 Source: University of Applied Sciences for Police and Public Administration of North Rhine-Westphalia, as of 11.2024

51 Source: FOM University of Applied Sciences, as of 11.2024

| | University Duisburg-Essen Campus Duisburg | Folkwang University Duisburg | HSPV Duisburg | FOM Duisburg | Overall |
|---------------------------------------|--|------------------------------------|------------------|-----------------|---------|
| Students in total | 12,975 | 132 | 3,500 | 330 | 18,427 |
| Of which international students | 4,248 | 108 | 0 | * 52 | 4,603 |
| Offered degree programmes | 74 | 4 | 5 | 12 | 81 |

Table 2: Students and courses offered at universities and colleges in Duisburg

More than half of the students in Duisburg (52.31 %) obtained their university entrance qualification in another district within North Rhine-Westphalia. A remarkable 27.36 % of students have a foreign university entrance qualification. A significant proportion of former Duisburg school pupils decide to study in their home city after obtaining their university entrance qualification: 13.29 % of students obtained their university entrance qualification at a school in Duisburg. A further 7.04 % of students obtained their university entrance qualification in another federal state of the Federal Republic of Germany.

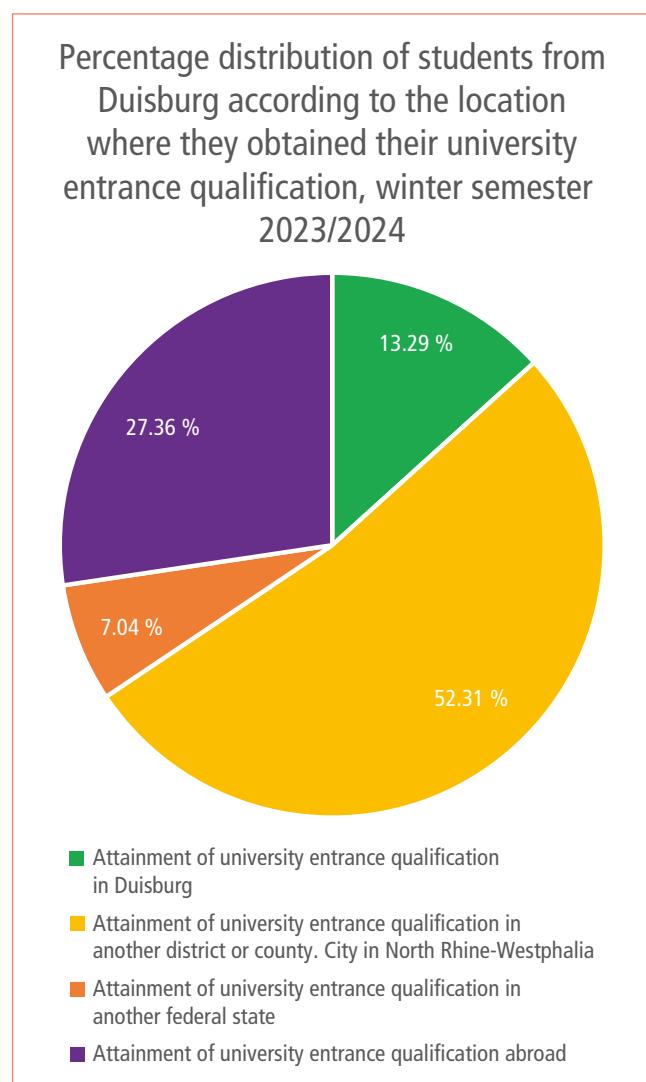


Figure 44: Percentage distribution of students according to the location where they obtained their university entrance qualification⁵³

52 No recording

53 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 06.2024

5.3 Percentage of academics

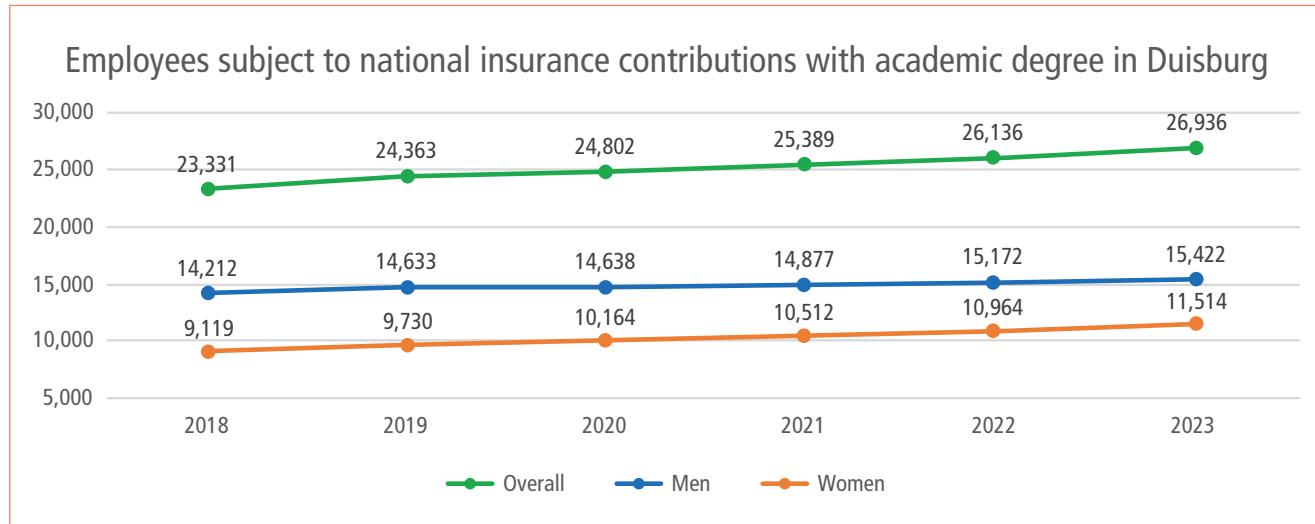


Figure 45: Number of employees subject to national insurance contributions with academic degrees⁵⁴

Between 2018 and 2023, the proportion of employees subject to national insurance contributions in Duisburg with a university degree rose steadily for both men and women. In 2023, a total of 26,936 employees subject to national insurance contributions recipients had an academic degree (13.50 %), compared to 23,331 (13.42 %) in 2018. This corresponds to an increase of over 3,000 academics. Although men account for just under 60 % of the total over the entire period, the proportion of women is increasing.



54 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, as of: 11.2024

5.4 Patent development

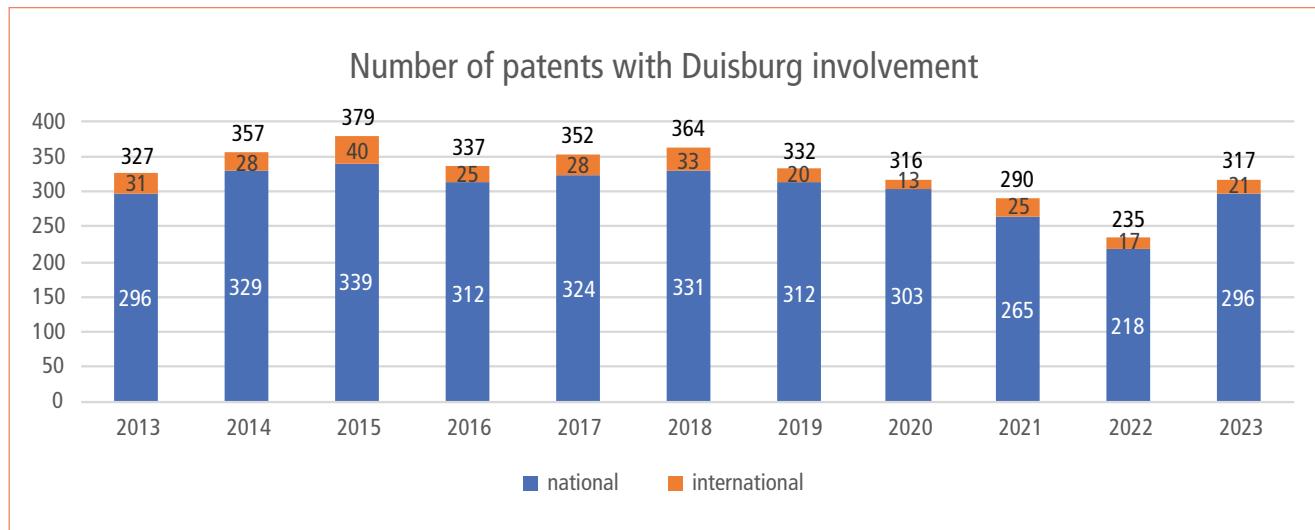


Figure 46: Number of patent applications in Duisburg⁵⁵

Most patents were registered between 2013 and 2023, with 379 applications in 2015. After that, the number initially fell to 337 (2016), then rose slightly in 2017 and 2018, and declined from 2019 onwards, reaching 235 in 2022. In 2023, there was another significant increase to 317 patents. The proportion of international patent applications remained largely constant at around 8 %, but slumped in 2019 and 2020 due to the pandemic, as cross-border research became more difficult. From 2021 onwards, these registrations rose again. Over the past ten years, most of our cooperation partners have come from neighbouring countries such as Austria, France, Belgium, the Netherlands and Switzerland, but also from the USA, India, South Korea and Egypt.

If the German Patent and Trademark Office grants a patent, the invention is generally protected for a maximum of 20 years from the date of filing. From the third year onwards, an annual fee must be paid to maintain patent protection. If payment is not made, the patent expires automatically. For medicinal products and plant protection products subject to authorisation, an extension of the term of protection is possible under certain conditions.⁵⁶



55 Source: German Patent and Trademark Office, as of 10.2024

56 Source: German Patent and Trademark Office: <https://dpma.de/patente/patentschutz/index.html>, as of 08.2023

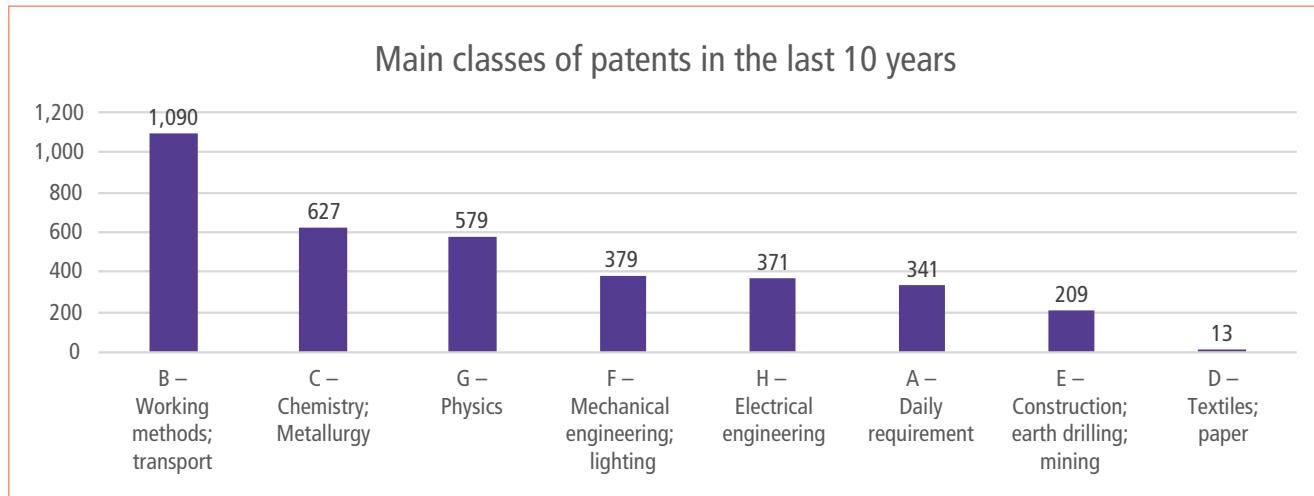


Figure 47: Sections of patents from the last 10 years⁵⁷

The International Patent Classification (IPC) divides technical knowledge in the field of inventions into different levels. The highest subdivision is into eight sections, A-H.⁵⁸

In line with Duisburg's core competence in logistics, most inventions in the section 'B – Working methods, transport' were registered in Duisburg in the last 10 years, with 1,090 patents. As Europe's most important steel location, Duisburg-based companies have registered 627 patents in the 'C – Chemistry; Metallurgy' section over the last 10 years. Patent applications from section 'G – Physics' also accounted for a large share with 579 applications, as did section 'F – Mechanical engineering, lighting, heating, weapons, explosives' with 379 applications.

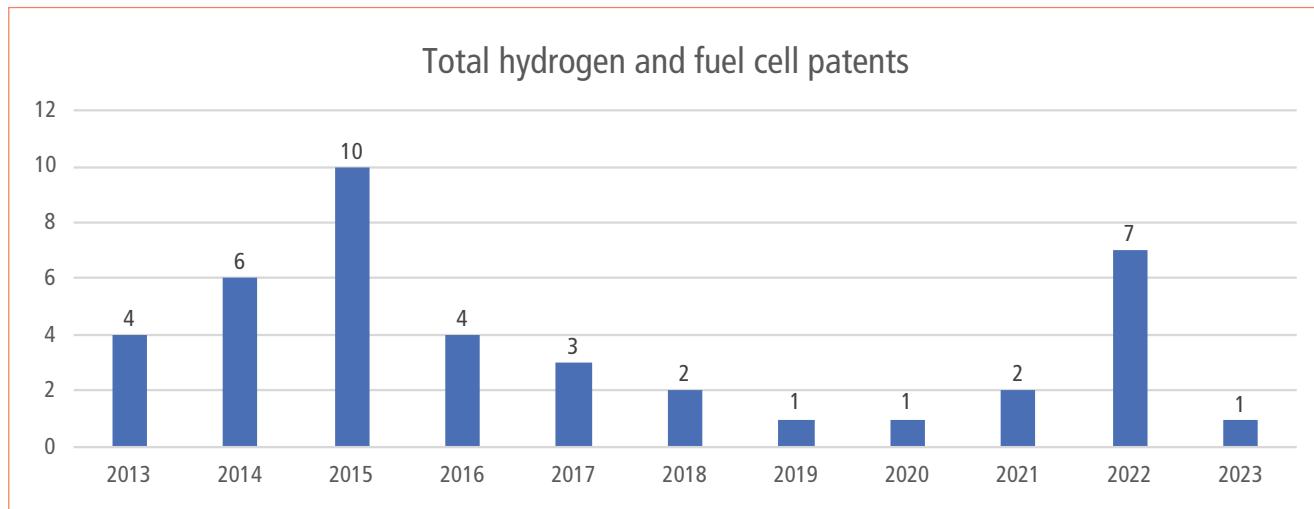


Figure 48: Total number of hydrogen and fuel cell patents⁵⁹

Over the past ten years, 41 patents for hydrogen and fuel cells have been registered in Duisburg. The highest number of applications was in 2015, with ten patents. The trend in patent applications in this area is dynamic, with strong fluctuations – for example, only one patent was filed in each of the years 2019, 2020 and 2023. In other years, significantly more in some cases.

In order to drive forward the hydrogen transition in Duisburg in a targeted manner, initial projects are already under way, and further projects are in the planning stage. A detailed overview of existing and future hydrogen projects can be found in Chapter 6.2.

57 Source: German Patent and Trademark Office, as of 10.2024

58 Source: German Patent and Trademark Office: <https://dpma.de/recherche/klassifikationen/patenteundgebrauchsmuster/internationalepatentklassifikation/index.html>, as of 07.2023

59 Source: German Patent and Trademark Office, as of 10.2024

6. Land use

With a total area of 233 square kilometres, Duisburg is the second-largest city in the Ruhr region after Dortmund. But even the largest urban area has its limits. This makes the planning, design and development of the existing space all the more important.

The systematic and resource-efficient development of land in the urban area is a key task for the city. As part of forward-looking urban development concepts, promising commercial and industrial sites, locations for large-scale projects and potential areas for new development are identified.

In addition to the areas to be newly developed, it is primarily the heavy industry sites that are being re-purposed as a result of structural change in the Ruhr region and are of great interest for land development.

The Duisburg city area also has a lot to offer in terms of recreation. In addition to the 22 bathing lakes and large forest areas, such as the Sechs-Seen-Platte (Six Lakes Plateau) and the Duisburg City Forest, the new 2027 land development plan also provides for increased use of green spaces.

On the one hand, new commercial and industrial areas create new jobs, while on the other hand, new residential and green spaces increase Duisburg's appeal as a place to live. This incentive ensures that new workers move to Duisburg, which, in turn, increases the amount of human capital available to the economy.



6.1 Current land use

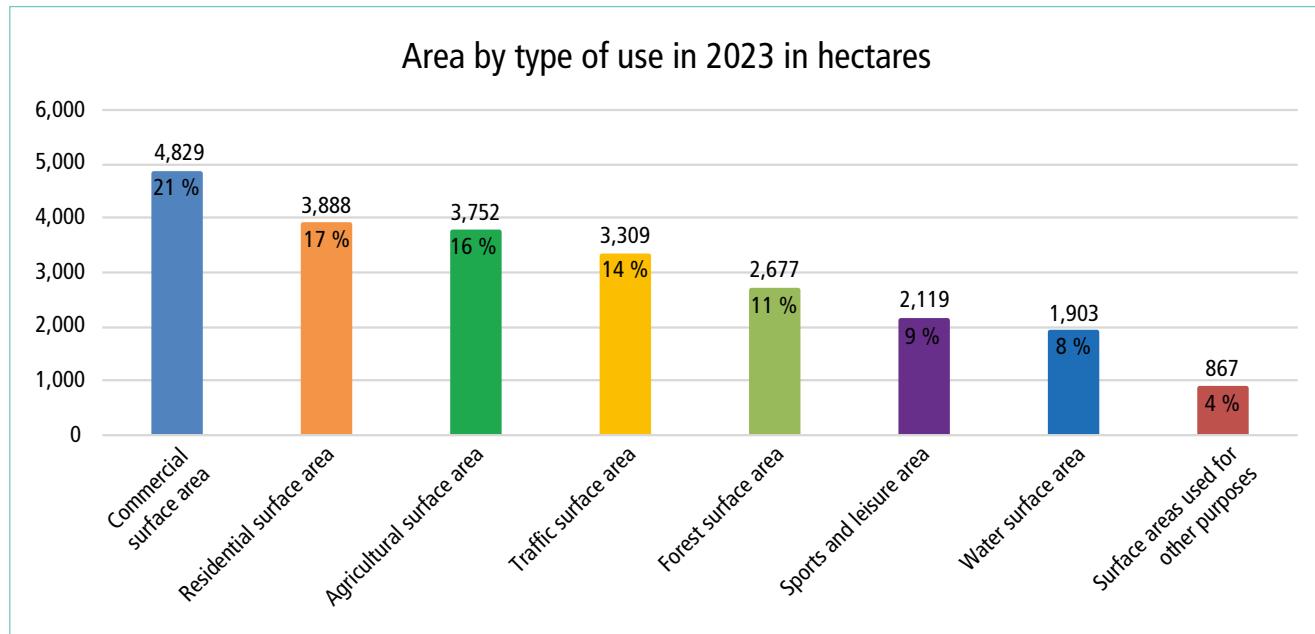


Figure 49: Surface area by type of use in 2023 in hectares⁶⁰

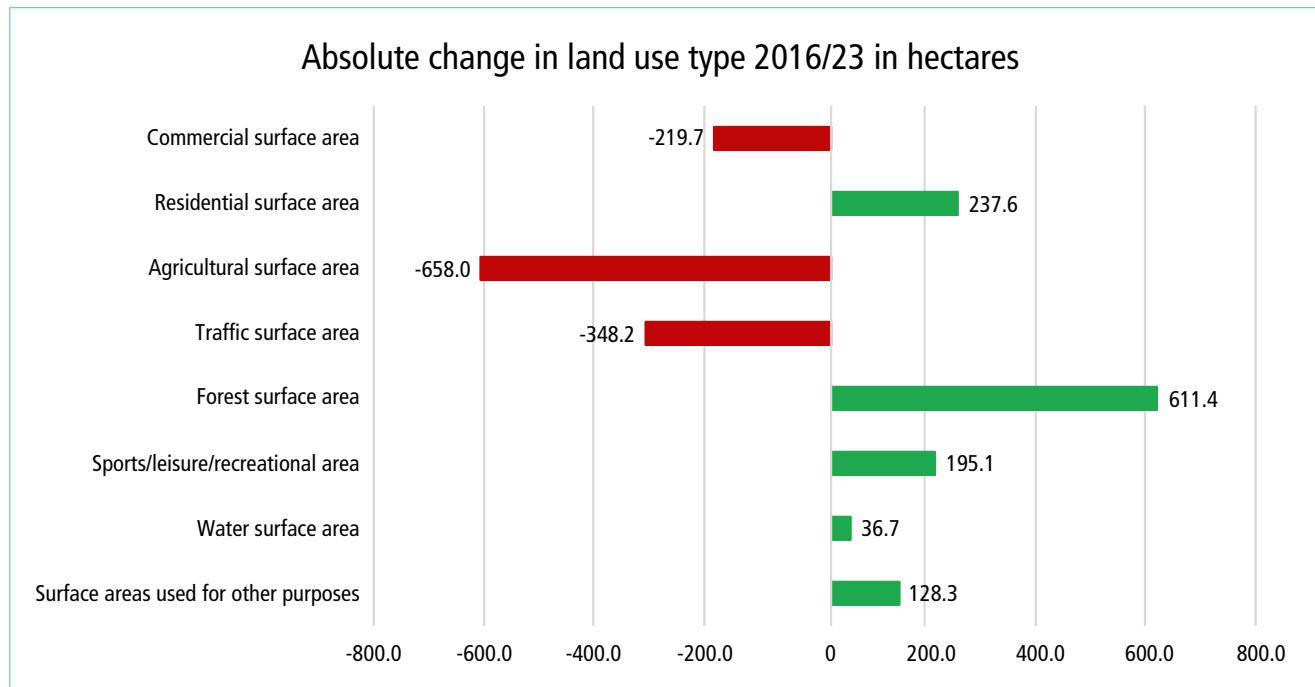


Figure 50: Absolute change in land use⁶¹

Land use in the Duisburg urban area is diverse. In 2023, the city covered a total area of 23,344 hectares – equivalent to more than 32,000 football pitches. Industrial land accounted for the largest share of Duisburg's total area, at 4,829 hectares (21 %). The Duisburg inland port covered around 1,550 hectares, almost a third of the total industrial area. Since 2016, the proportion of commercial surface area has decreased by 219.7 hectares.

60 Source: City of Duisburg, as of: 10.2024

61 City of Duisburg, as of: 10.2024



In 2023, a total of 3,888 hectares of residential land was available for Duisburg's more than 500,000 inhabitants. With a share of 17 %, this type of use is the second largest in Duisburg. As the population in Duisburg has been growing since 2016, the residential building area has also increased by 237.6 hectares since then.

In 2023, agricultural land in the city of Duisburg covered 3,752 hectares (16 %). Compared to 2016, this represents a decrease of 658.0 hectares and is, therefore, the land use type that has declined the most.

Duisburg is located at a transport hub. Important motorways such as the A3, A40 and A42 run through the city. This meant that transport infrastructure accounted for 3,309 hectares (14 %) of the city's total area. Compared to 2016, this type of land use decreased by 348.2 hectares in 2023.

Since 2016, the city of Duisburg has been creating more and more forest areas with a view to sustainability and local recreation for its citizens. From 2016 to 2023, the area increased by 611.4 hectares to 2,677 hectares. This corresponds to the largest increase in area of all land use types during this period.

The area designated for sports, leisure and recreation increased to 2,119 hectares in 2023. Here too, an increase of 195.1 hectares has been recorded since 2016. Located on the Rhine and Ruhr rivers, the Duisburg city area will have 1,903 hectares (8 %) of water in 2023. These include the Six Lakes Plateau in the south of Duisburg, covering 150 hectares, the Innenhafen or inland port, covering 89 hectares, and the 37.5 km long stretch of the Rhine.

6.2 Future and existing commercial and industrial sites

Wedau Technology Park

A state-of-the-art technology quarter is being built on the approximately 30-hectare site of the former railway repair workshop in Duisburg-Wedau, strengthening the innovative power of the city and the region. A key component is the planned expansion of the University of Duisburg-Essen (UDE), which intends to relocate its engineering and computer science faculties, including affiliated institutes, to the site.

In addition to university use, the quarter will house technology-oriented companies, research and development firms, and start-ups. The Technology Centre Wedau (TZ Wedau) acts as an innovation hub for start-ups and supports knowledge transfer between science and industry. The innovation campus is intended to attract start-ups and research institutes and encourage interdisciplinary collaboration.

The neighbourhood will be connected to the 6-Seen-Wedau development area to create a vibrant, smart district with regional appeal.

In addition, the sports park area will be expanded by 3.4 hectares and supplemented with open spaces and green areas that will enable recreation, interaction and international sporting events.

The neighbourhood is divided into five functional areas:

1. University of Duisburg-Essen (UDE): Relocation of the Faculty of Engineering.
2. Wedau Technology Centre: Innovation hub for start-ups, expected to be located in the Alte Richthalle.
3. Innovation campus: establishment of research institutes and technology-oriented businesses.
4. Sports park: Expansion for recreation, socialising and sporting events.
5. Ensemble at the entrance to the neighbourhood: listed buildings such as the Alte Feuerwache (Old Fire Station) with its clock tower.

With targeted promotion of Smart Engineering, Clean Industry and Data Science, a sustainable innovation hub is emerging here that will contribute to regional value creation in the long term. The close links between science, business and technology are creating new jobs, both for highly qualified professionals and for innovative start-ups and technology-oriented companies. The sustainable development of the neighbourhood strengthens Duisburg as an attractive business location and contributes to the economic resilience of the entire Rhine-Ruhr metropolitan region. The interaction of all usage modules will make the Wedau Technology Quarter a model project for successful structural change in the Ruhr region – with a high profile for North Rhine-Westphalia and beyond.

Further information can be found at the following link: <https://www.technologie-quartier-wedau.de>

Hydrogen projects in Duisburg

In order to drive forward the hydrogen transition in Duisburg in a targeted manner, the first hydrogen projects are already being implemented, with more in the pipeline. An overview of hydrogen projects in Duisburg is provided in the overview map 'Hydrogen activities in Duisburg' (see Figure 50 – as of 13.12.2024). The individual activities are also colour-coded into four different categories: projects, economy, city corporation, research and education. The current version of the overview map can be downloaded from the website of the City of Duisburg. The overview map clearly shows the four metropolitan areas for hydrogen activities. On the one hand, there is increasing activity in the north of Duisburg in and around the steelworks of thyssenkrupp Steel Europe, as well as in and around the steelworks of Hüttenwerke Krupp Mannesmann in the south of Duisburg. The third conurbation is located in the centre of Duisburg in the Duisburg harbour area. The port itself is involved in hydrogen-related activities, and companies from the hydrogen industry are also setting up operations here. The fourth metropolitan area south of the Ruhr is home to the University of Duisburg-Essen, together with the Centre for Fuel Cell Technology and its associated hydrogen test field.

HYDROGEN ACTIVITIES IN DUISBURG

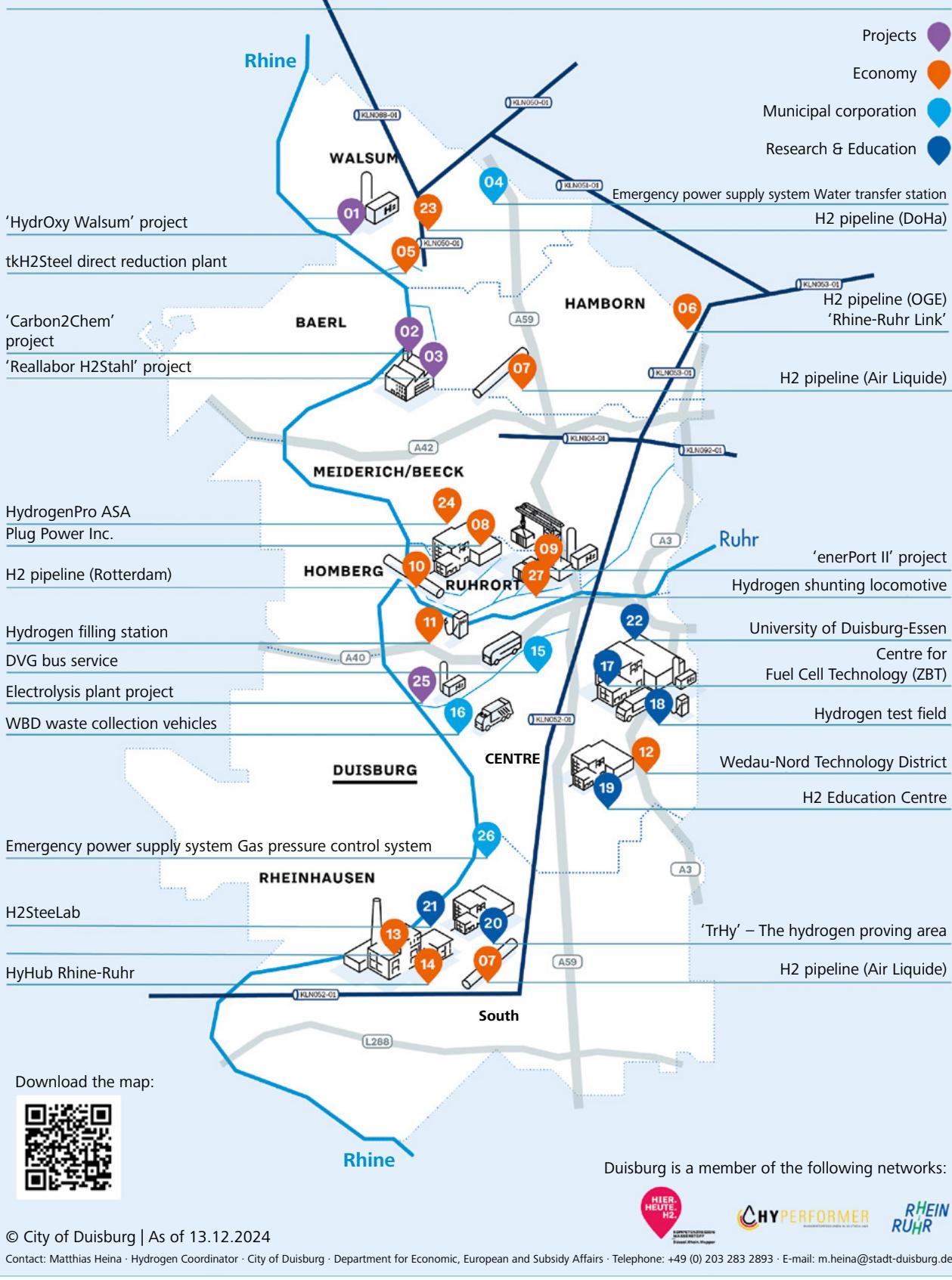


Figure 51: Hydrogen activities in Duisburg⁶²

Contact: Matthias Heina · Hydrogen Coordinator · City of Duisburg · Department for Economic, European and Subsidy Affairs · Telephone: +49 (0) 203 283 2893 · E-mail: m.heina@stadt-duisburg.de

Individual hydrogen activities are explained in more detail below:

Duisburger Verkehrsgesellschaft AG (DVG) has decided to procure 100 hydrogen-powered fuel cell buses by 2030 following a groundbreaking Council resolution (11/2022). The first eleven fuel cell solo buses arrived in September 2024 and have been in regular service since February 2025. Another 14 fuel cell articulated buses have already been ordered and are expected to arrive by the end of 2025. A mobile H2 filling station from Air Liquide will take over supply at the depot until the stationary H2 filling station is completed. The further bus procurement strategy was made more flexible by a Council decision (02/2025) so that low-emission HVO-powered buses can also be procured.

In addition, seven hydrogen-powered waste collection vehicles have been put into service by Wirtschaftsbetriebe Duisburg (WBD). In 2021, the first hydrogen-powered waste collection vehicle in Germany was put into service.

Iqony GmbH, formerly STEAG GmbH, is planning to build a plant for the production of green hydrogen with a capacity of up to 520 MW and a supplementary large-scale battery system for better market and grid integration of green electricity as part of the 'HydrOxy Walsum' project at the traditional power plant site in Duisburg-Walsum. The hydrogen produced will enable regional customers from industry and the mobility sector to de-carbonise their processes.

In the tkH2Steel project, thyssenkrupp Steel Europe AG is planning to build its first direct reduction plant (DR) with two downstream melting furnaces in the iron sector. An order for the construction of the DR plant was placed with the SMS Group at the end of February 2023. The project is being funded by the state and federal governments with around EUR 2 billion. The Düsseldorf district government has granted early building permission for the facility. Final approval is expected in 2025. Production is currently scheduled to start at the end of 2026.

At the same time, Open Grid Europe (OGE) is working with Thyssengas to push ahead with plans for the 'DoHa' hydrogen pipeline (Dorsten to Duisburg-Hamborn). The pipeline will initially transport green hydrogen from RWE's energy site in Lingen – and later also from German seaports – to the tkSE steelworks, but also beyond. The planning approval process is expected to be completed by the end of 2026. Construction of the pipeline is scheduled for 2027. With commissioning planned for the end of 2027, this will make a decisive contribution to the hydrogen supply of the tkSE steel site and the region, further strengthening Duisburg's position as a hydrogen capital. The project is also part of the national hydrogen core network, which was approved by the Federal Network Agency in October 2024.

Another pioneering project is 'enerPort II' in the port of Duisburg. Not only is the largest container terminal in the European hinterland being built here, but also the first terminal to be operated entirely climate-neutrally using hydrogen, photovoltaics and battery storage. The neighbouring districts are also to be supplied with sustainable energy. Commissioning took place in September 2024.

Furthermore, Duisburg is home to the Centre for Fuel Cell Technology (ZBT), a renowned, application-oriented research institute in the field of hydrogen and fuel cell research. As one of the world's leading research and development centres, ZBT plays an important role in promoting and developing hydrogen technologies. On 26 September 2024, the new hydrogen laboratory 'HyTechLab4NRW' was opened at the ZBT.

Another step towards hydrogen innovation is the 'TrHy – The hydrogen proving area' project. As one of four planned hydrogen innovation centres in Germany, this project is dedicated to developing norms and standards for hydrogen solutions in the mobility sector, particularly in the heavy-duty segment. As an independent testing centre for hydrogen systems, it is supported by other satellites.

As part of its comprehensive hydrogen strategy, the city of Duisburg is currently working with strong partners from the region to examine the possibility of establishing an H2 education centre in Duisburg. This centre could be developed as part of the 5-site programme and could potentially make a significant contribution to continuing vocational training in the field of hydrogen technology. Training and retraining programmes for industrial companies in the region are to be implemented in this way.

6.3 Property market

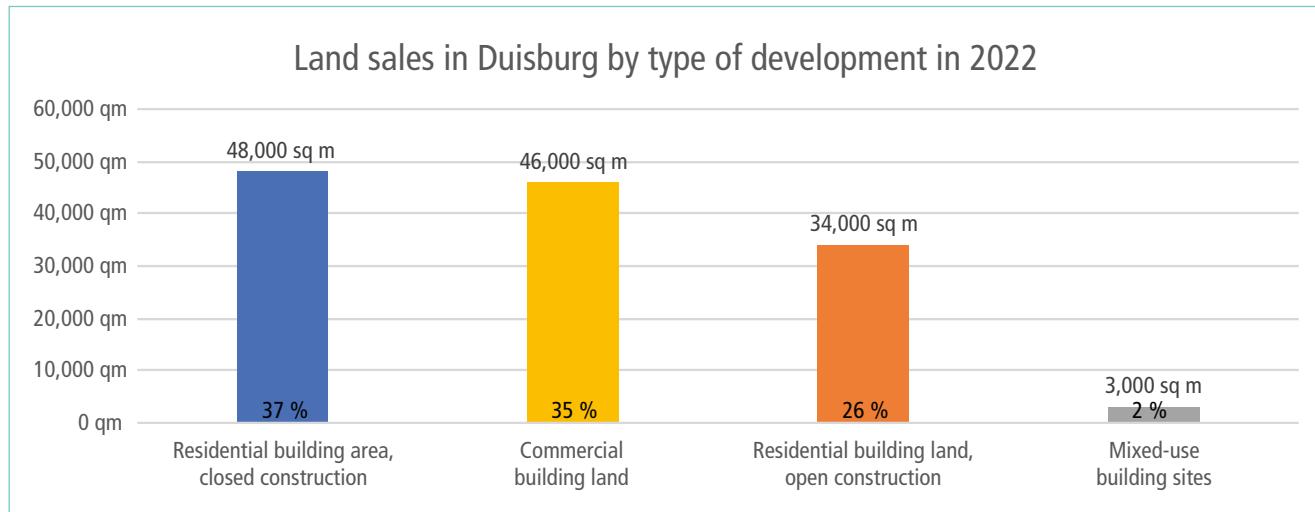


Figure 52: Land sales by development type⁶³

In 2022, land with a total area of around 131,000⁶⁴ square metres was sold in Duisburg. The largest share of this, at around 48,000 square metres (37 %), was accounted for by residential land in closed development. This includes, for example, perimeter block developments with no lateral distance to other buildings. Around 46,000 square metres (35 %) of commercial building land in Duisburg was sold in 2022. Around 34,000 square metres (26 %) of the land sold was residential land with open construction, i.e. development with side boundaries. Mixed-use sites accounted for 3,000 square metres, or around 2 % of land sales in Duisburg.

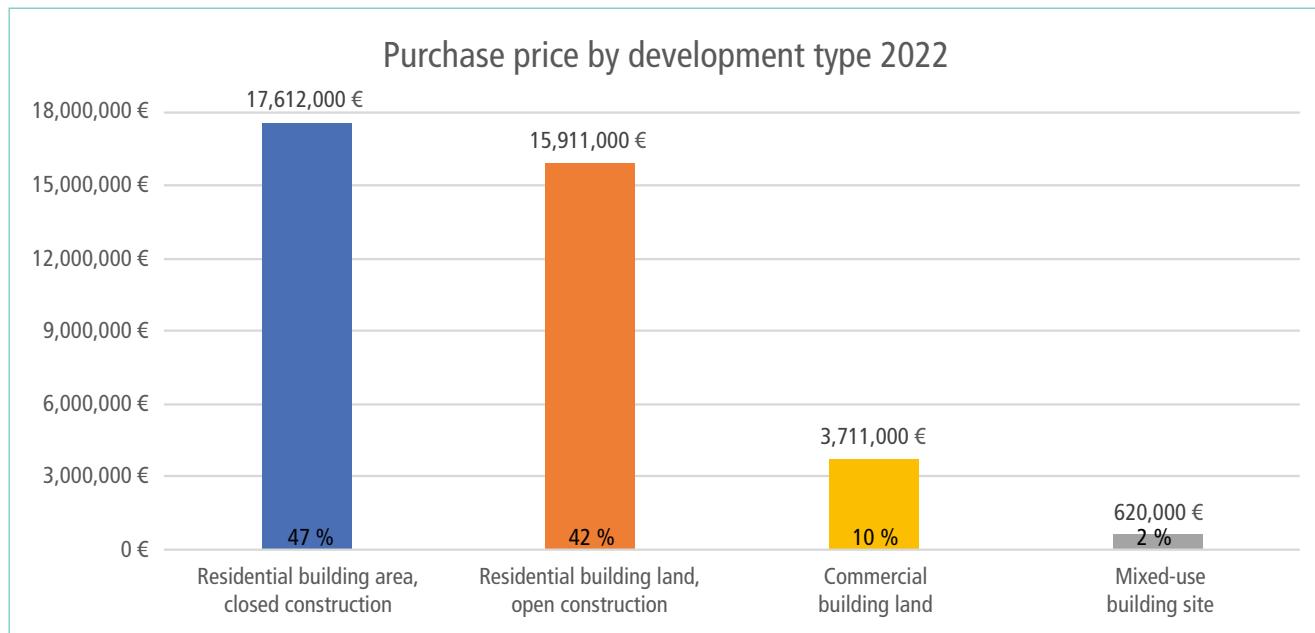


Figure 53: Purchase price by type of development⁶⁵

63 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

64 Agricultural land is absent

65 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

The land sold in Duisburg in 2022 had a total value of around EUR 37,854,000.⁶⁶ Almost half (47 %) of this was accounted for by residential building land in closed development, which achieved a total purchase price of around EUR 17,612,000. Residential land in open construction accounted for around EUR 15,911,000, or 42 %. A total of EUR 3,711,000 (10 %) was generated for commercial building land. Mixed-use sites accounted for just under 2 % of the total purchase price by development type in Duisburg, at EUR 620,000.

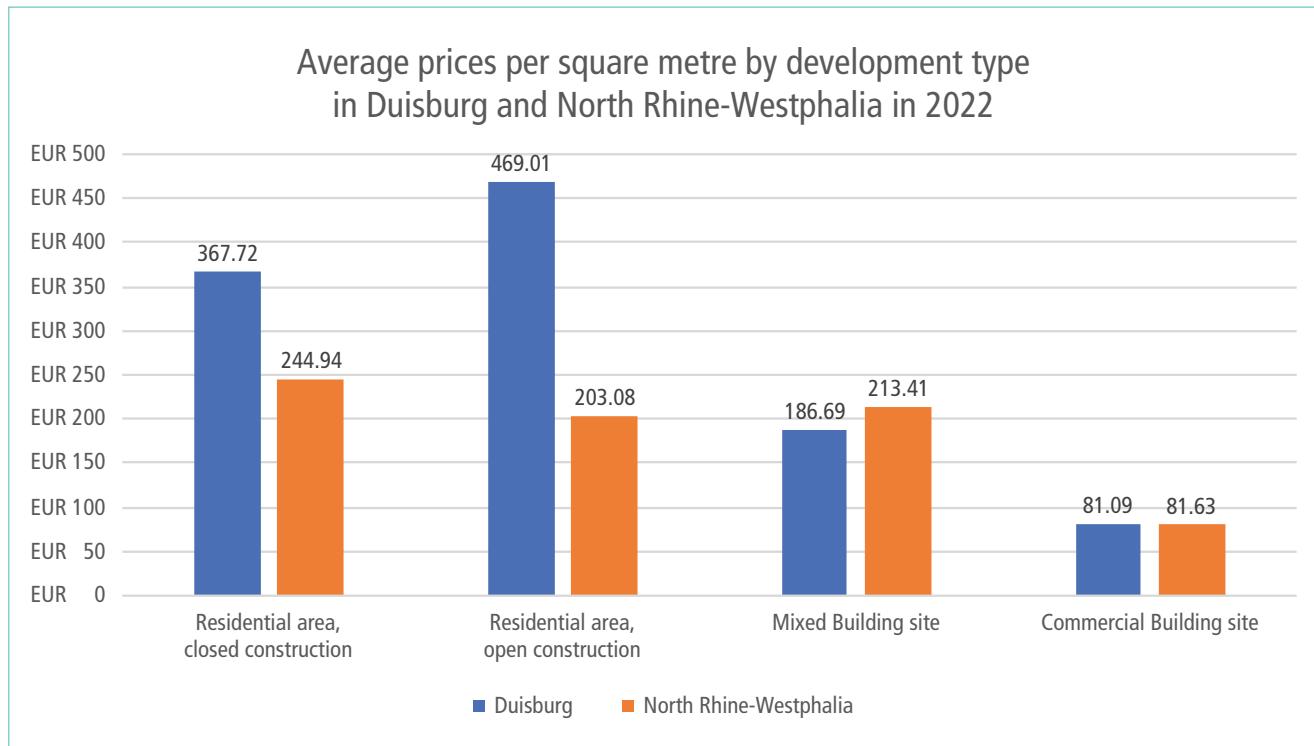


Figure 54: Average prices per square metre by development type in Duisburg and North Rhine-Westphalia⁶⁷

The average prices per square metre in Duisburg were above the North Rhine-Westphalia average for almost all types of development considered.⁶⁸ The most expensive type of development in Duisburg was residential land in open construction. The average purchase price for these properties was EUR 469.01 per square metre. The average price in North Rhine-Westphalia was EUR 203.08. Residential land in densely built-up areas cost an average of EUR 367.72 per square metre in Duisburg. In North Rhine-Westphalia, this type of development was the most expensive at EUR 244.94 per square metre. The average price per square metre for commercial building land was EUR 81.09 in Duisburg and EUR 81.63 in North Rhine-Westphalia.

⁶⁶ Agricultural land is absent

⁶⁷ Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

⁶⁸ Agricultural land is absent

7. Transport infrastructure

Transport infrastructure is one of the most important location factors for a successful economy. Thanks to its maritime and continental transport infrastructure, Duisburg is considered a trimodal logistics hub for (inter)national freight transport. The decisive factor here is not only the road and rail network, but also Duisburg's inland port, in particular.

In addition to economic aspects, climate protection and sustainability are also key priorities. The Port of Duisburg is already shifting large volumes of goods from road to rail and water, thereby making an important contribution to sustainable structural change. This also enables Duisburg to assert itself as a business location in the areas of climate protection and sustainability.

7.1 Motorway network

An important part of Duisburg's transport infrastructure are the five motorways, which run through the city with a total length of 62.5 kilometres. The A42, A40 and A524 motorways cross the city from east to west. The A42, also known as the 'Emscherschnellweg', is the northernmost of the three motorways and connects Duisburg with the cities of Kamp-Lintfort, Essen and Dortmund, among others. The A40 is one of the busiest roads in the Ruhr region. It runs through the Ruhr cities of Essen, Bochum and Dortmund, among others, and is also an important link to the Dutch border. The A524 is located in the far south of the city. It runs from the Duisburg district of Hückingen to the Breitscheid junction, where it connects to the A3 and A52 motorways.

The city's two north-south connections are the A59 and the A3 motorways. In the north, the A59 begins in the Walsum district and ends at the Duisburg-Süd motorway junction. From there, there is a direct connection to the neighbouring metropolis of Düsseldorf via the Federal Highway 8. From the Dutch border in the west, the A3 connects Duisburg with many other regions of Germany, such as Cologne, the Rhine-Main area, Franconia and eastern Bavaria.

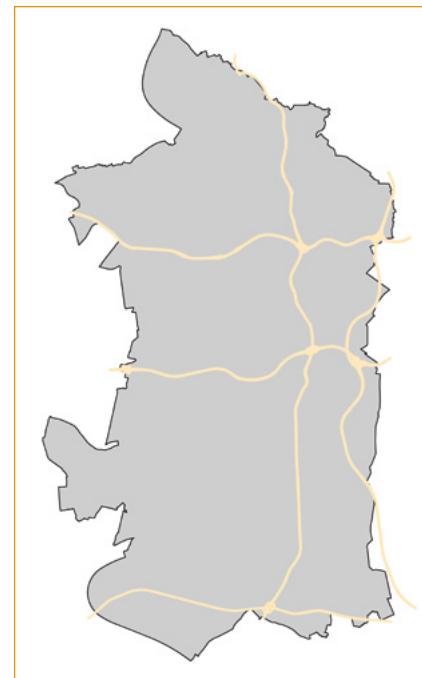


Figure 55: Motorway network ⁶⁹



69 Source: City of Duisburg, as of: 10.2024

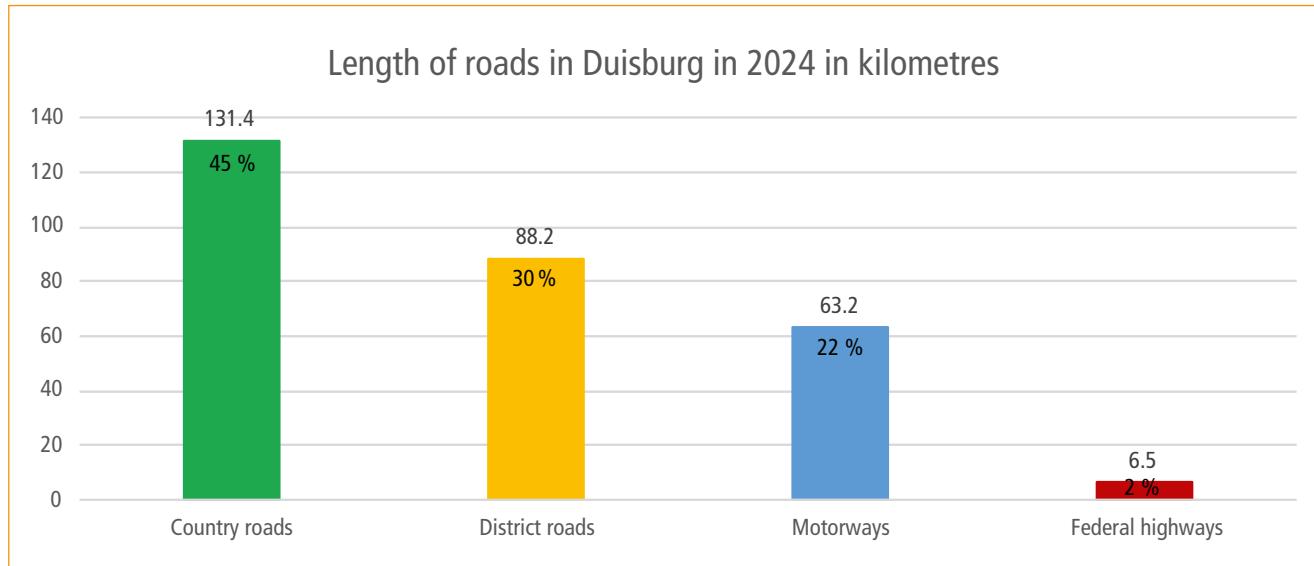


Figure 56: Supra-local road length in Duisburg ⁷⁰

Almost half (45.42 %) of the roads in the Duisburg city area are rural roads. They run through the city for a total length of 131.4 kilometres. The district roads in Duisburg have a total length of 88.2 kilometres (30.49 %). The motorway sections in the Duisburg city area are 63.2 kilometres long, accounting for 21.85 % of the total road length. With a length of 6.5 kilometres, federal highways account for 2.25 % of Duisburg's road network.

7.2 Rail network

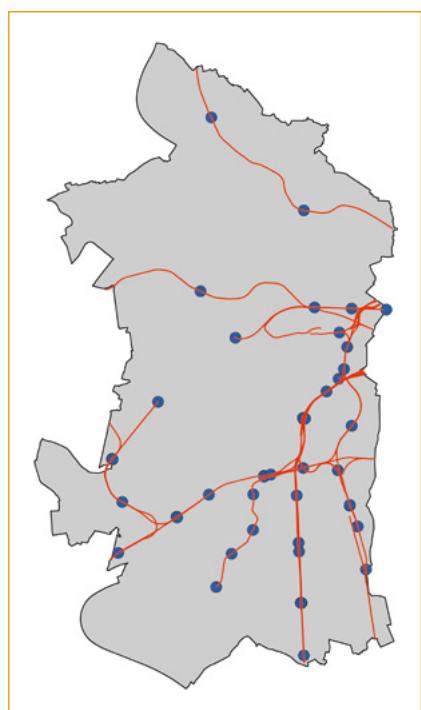


Figure 57: Rail network ⁷¹

The rail network in Duisburg has a total length of 211.7 kilometres and is, therefore, of great importance to the city's economy. In the far north of the city, a route runs through the districts of Walsum, Aldenrade, Röttgersbach and Neumühl. The hub of Duisburg's rail network is the main station in the city centre. From there, two main lines run south towards Düsseldorf. The north-east is also connected to the southern district of Hüttenheim by rail. There is an east-west connection between Oberhausen and Moers, running parallel to the A42 motorway. A railway line runs over the Hochfelder railway bridge to Rheinhausen and Frielersheim, providing a direct connection to the neighbouring town of Krefeld.

The approximately 40 operating locations in the Duisburg city area are marked in blue in Figure 56. These include passenger stations, freight stations and industrial stations. Most are located along the eastern and southern sections of the route.

Duisburg Central Station offers direct connections to many German and European cities. In local transport, destinations such as Cologne, Koblenz, Münster, Osnabrück, Aachen, Dortmund, Bochum, Essen and Arnhem in the Netherlands can be reached without changing trains. Long-distance trains run from Duisburg to destinations including Berlin, Hamburg, Basel, Frankfurt am Main, Amsterdam, Munich and Vienna.

70 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2023, as of: 10.2024

71 Source: City of Duisburg, as of: 10.2024

83 % of the rail network in the Duisburg city area is electrified by overhead lines. This contributes to the sustainability of rail transport. 17 % are not electrified.

Since 2009, Duisburg Central Station has been undergoing a series of modernisation and refurbishment works to make it more attractive. The renovation of the reception hall was completed back in 2011. Since August 2022, the track hall has been undergoing renovation, which will include a new roof and new platforms. Completion is scheduled for 2028.

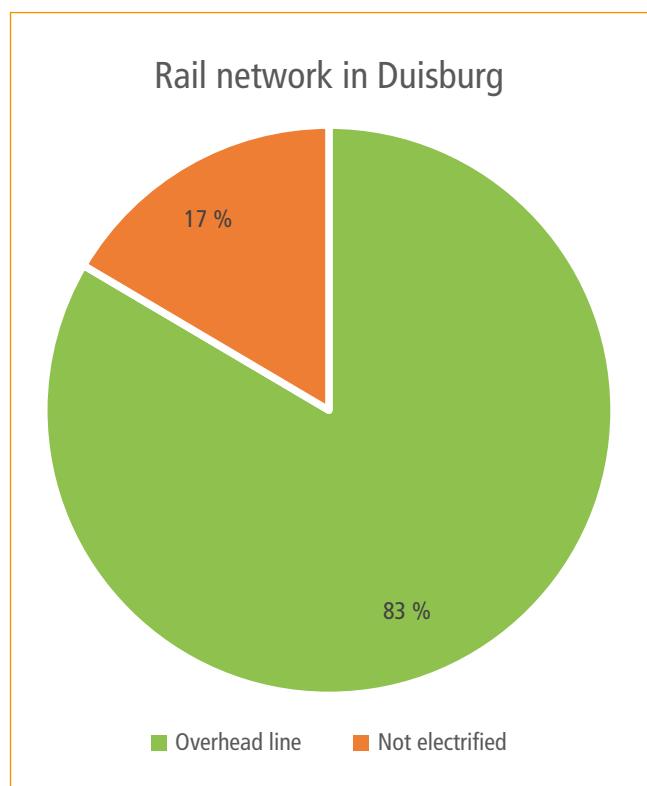


Figure 58: Electrification of the rail network ⁷²



72 Source: City of Duisburg, as of: 05.2023

7.3 Inland port



Located on the Rhine and Ruhr rivers, the Port of Duisburg is the largest inland port in the world, covering an area of around 1,550 hectares. It was founded over 300 years ago in 1716 in what is now the Ruhrort district. Since then, the port has been continuously expanded and developed. Today, Duisburg's inland port has a length of 40 kilometres and 21 harbour basins. Every year, 25,000 trains and 20,000 ships are handled at the site, with a total throughput of 104.9 million tonnes. From Duisburg, goods are not only transported to neighbouring European countries, but also to various destinations in China with up to 60 trains per week. The Port of Duisburg thus makes a significant contribution to the economic strength of the Duisburg region.

More than 50,000 people are employed (directly and indirectly) in around 300 transport and logistics companies dependent on the port.⁷³

As Europe's leading logistics hub, the inland port plays a pioneering role in the field of sustainable logistics. Europe's first climate-neutral hinterland terminal has been built in the Port of Duisburg on an area of 235,000 square metres. The terminal will be powered entirely by hydrogen and will also supply energy to the neighbouring districts.⁷⁴

7.4 Waterway routes

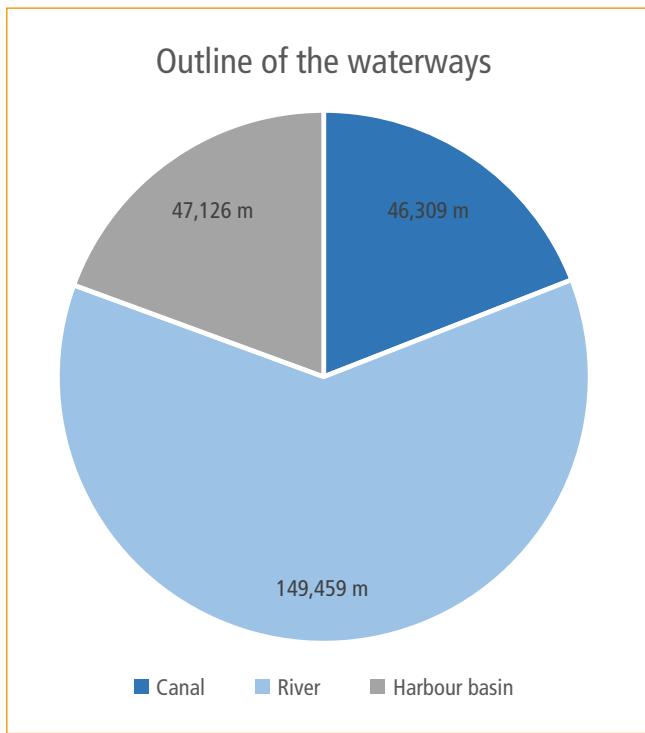


Figure 59: Floor plan of the waterways⁷⁵

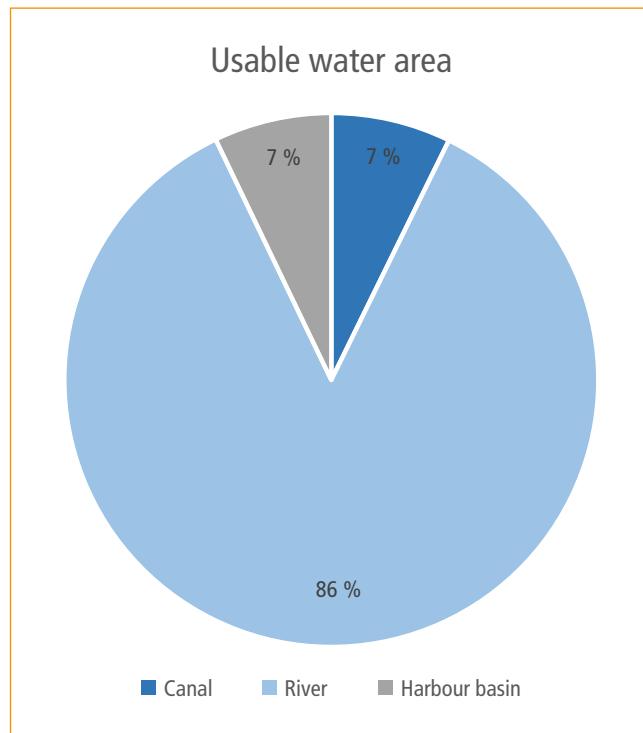


Figure 60: Usable water area⁷⁶

73 Source: duisport: <https://www.duisport.de/hafeninformation/>, as of: 09.2023

74 Source: duisport: <https://www.duisport.de/beitrag-zur-energiewende-im-duisburger-hafen-entsteht-das-erste-lager-fuer-tankcontainer-mit-gruenen-energietaegern/>, as of: 12.2024

75 Source: City of Duisburg, as of: 10.2024

76 Source: City of Duisburg, as of: 10.2024

The canals, the Rhine and Ruhr rivers, and the harbour basins make Duisburg a city rich in water. The total usable area of water in Duisburg is 21.61 km². With a total length of 242.89 kilometres, the waterways offer important transport options and serve as local recreation areas for citizens. The canals and harbour basins in the urban area each account for around 7 % of the water area. Canals are artificially constructed waterways designed for the transport of goods. It is 46.31 kilometres long in Duisburg. The harbour basins cover a total length of 47.13 kilometres.

The Rhine and Ruhr rivers account for the largest share of water areas in Duisburg, with 86 % and a total length of 149.46 kilometres, with the Rhine playing the dominant role with its 37.5-kilometre course through Duisburg. It begins in the south of the city on the border with Düsseldorf along the Mündelheim district and continues northwards to the border with Rheinberg and Dinslaken. From the east of the neighbouring town of Mülheim, the Ruhr flows between the districts of Obermeiderich and Duissern to Duisburg.

From there, it flows westward and finally joins the Rhine at Homberg, Ruhrort and Kaßlerfeld. The Duisburg harbour with its 21 harbour basins is also located there in the Ruhrort district.

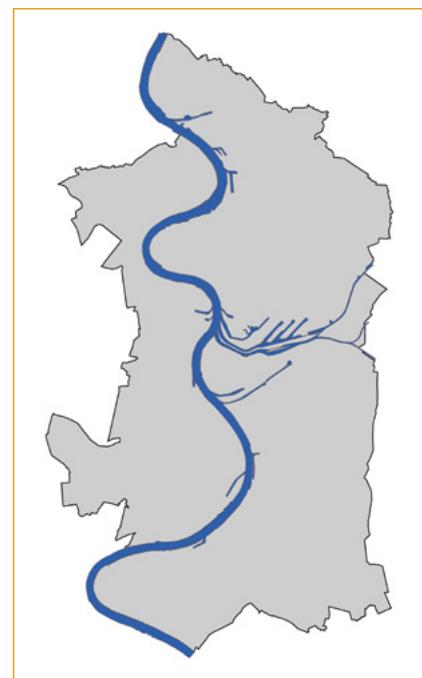


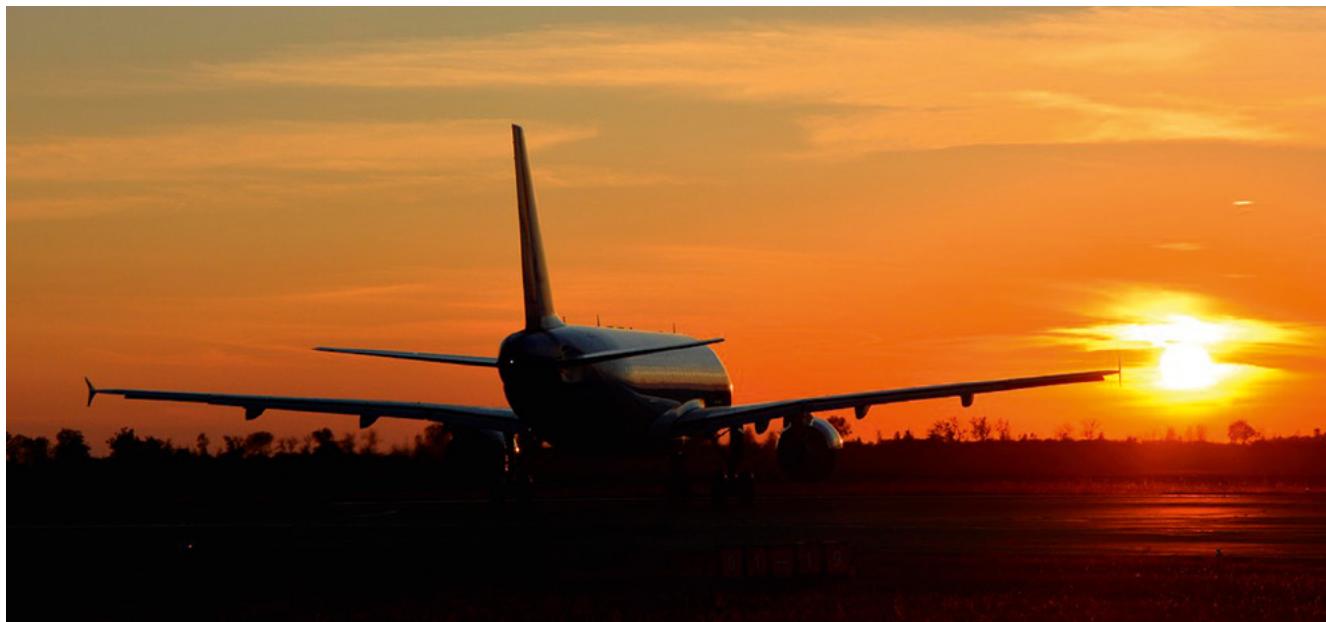
Figure 61: Waterways in Duisburg ⁷⁷



77 Source: City of Duisburg, as of: 10.2024

7.5 Airport

Duisburg is not only well-connected by road and rail, but also by several international airports. Düsseldorf International Airport, for example, is only 20 minutes by car from Duisburg. Airport Weeze, Cologne-Bonn Airport and Dortmund Airport are also less than an hour's drive away. Its air transport links make Duisburg an attractive location for private and business travel, as well as for shipping goods.



7.6 Broadband expansion

As part of its Smart City initiative, the city of Duisburg is pursuing the goal of installing a comprehensive fibre optic network in the urban area by 2030 and is already very active in broadband expansion. This goal is to be achieved both through the commercially viable expansion of network operators and through the subsidised expansion of so-called 'white spots'. White spots are areas that are underserved, where there is currently no NGA (next-generation access) coverage and none is planned for the next three years. For this reason, the city of Duisburg applied to federal and state funding bodies for grants for broadband expansion, which were approved in the amount of EUR 16,201,242 each.

The planned implementation period for the subsidised broadband expansion in Duisburg has been set for December 2025. The progress made to date is clearly illustrated by market research data from 2020 and 2022, among other things.

| Speed | Transfer | Share in 2022 | Share in 2024 | Share in 2028 |
|--|-----------------------|---------------|---------------|---------------|
| Bandwidths <100 Mbit/s | Copper | 10.00 % | 4.70 % | 1.70 % |
| Bandwidths between 100 and 250 Mbit/s | Copper | 25.25 % | 34.72 % | 10.37 % |
| Bandwidths <1,000 Mbit/s ⁷⁸ | Coaxial cable | 1.18 % | 0.40 % | 0.16 % |
| Gigabit-capable connections | Glass & Coaxial Cable | 57.39 % | 60.18 % | 87.78 % |
| Address points | | 95.908 | 95.830 | 95.830 |

Table 3: Broadband expansion 2022–2028 ⁷⁹

78 Non-gigabit-capable connections

79 Source: City of Duisburg, as of: 06.2024

In 2022, around 10 % of bandwidths were able to achieve a transmission speed of <100 Mbit/s, approx. 25.25 % achieved speeds between 100 and 250 Mbit/s, and 1.18 % achieved values below 1,000 Mbit/s. 57.39 % of lines were equipped with fibre optics. By 2024, the share of bandwidths below 1,000 Mbit/s will have risen to 60.18 %. The proportion of bandwidths between 100 and 250 Mbit/s also rose by around 9 %. By 2028, bandwidths with transmission speeds below 1,000 Mbit/s will be replaced and the proportion of gigabit-capable connections will rise to 87.78 %.

The fibre optic coverage rate is set to rise from the current 20 % to around 75 % by 2028. Fibre optic cables are currently being installed in 15 districts. Four areas already have comprehensive fibre optic coverage.⁸⁰

The adjacent graphic illustrates the broadband expansion in the Duisburg city area to date. Apart from the aforementioned 'white spots' where sufficient bandwidth is not available, the rest of the city is already largely covered by lines that achieve transmission speeds of 600 to 1,000 Mbit/s (dark blue). The areas with bandwidths of <250 Mbit/s (green) and 251-399 Mbit/s (light blue) are mainly located in the north-west and south-east.

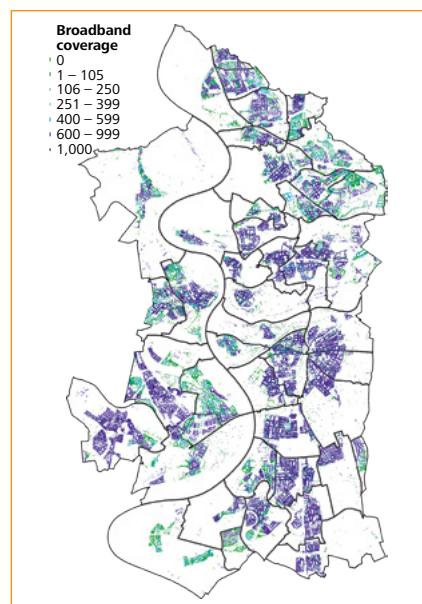


Figure 62: Broadband coverage⁸¹



80 Source: City of Duisburg, as of: 11.2024

81 Source: City of Duisburg, 2022

8. Location marketing: geography and location analysis

8.1 Association with three regions (Lower Rhine, Ruhr area, Rhineland)

Located in western North Rhine-Westphalia on the Rhine and Ruhr rivers, Duisburg belongs to three regions: the Rhineland, the Lower Rhine region and the Ruhr area. Each of these regions has its own special features and characteristics. With a total area of 232.84 km² and more than half a million inhabitants, Duisburg is an important hub in these conurbations.



Figure 63: Area (Lower Rhine, Rhineland, Ruhr region) ⁸²

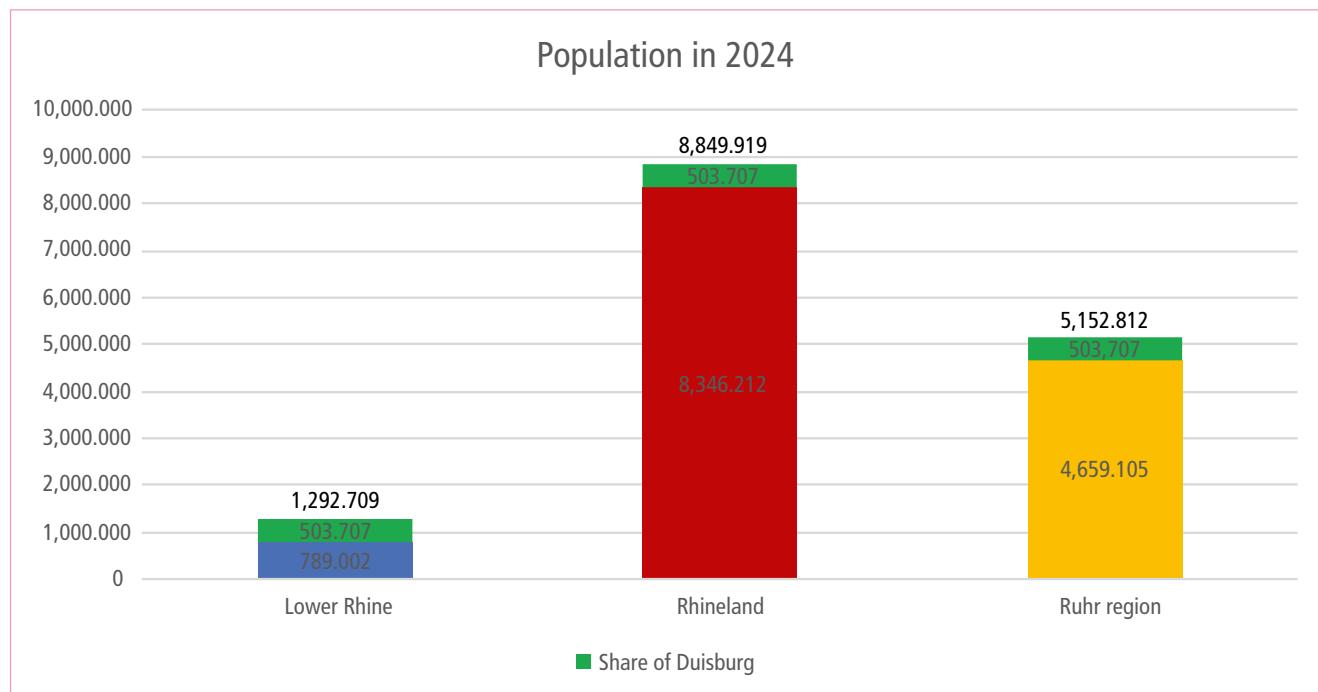


Figure 64: Population (Lower Rhine, Rhineland, Ruhr region) ⁸³

82 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

83 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

The largest and most populous of the three regions is the Rhineland metropolitan region, with a total area of 12,277.69 km² and 8,849,919 inhabitants. The Ruhr region is the largest conurbation in Germany and one of the largest in Europe. Covering an area of 4,438.93 km², 5,152,812 people live along the Ruhr. The Lower Rhine region includes the independent city of Duisburg and the districts of Wesel and Kleve. In the west, the region borders the Netherlands, which means that Duisburg has cross-border connections. The Lower Rhine region covers a total area of 2,508.59 km² and is home to 1,292,709 inhabitants.

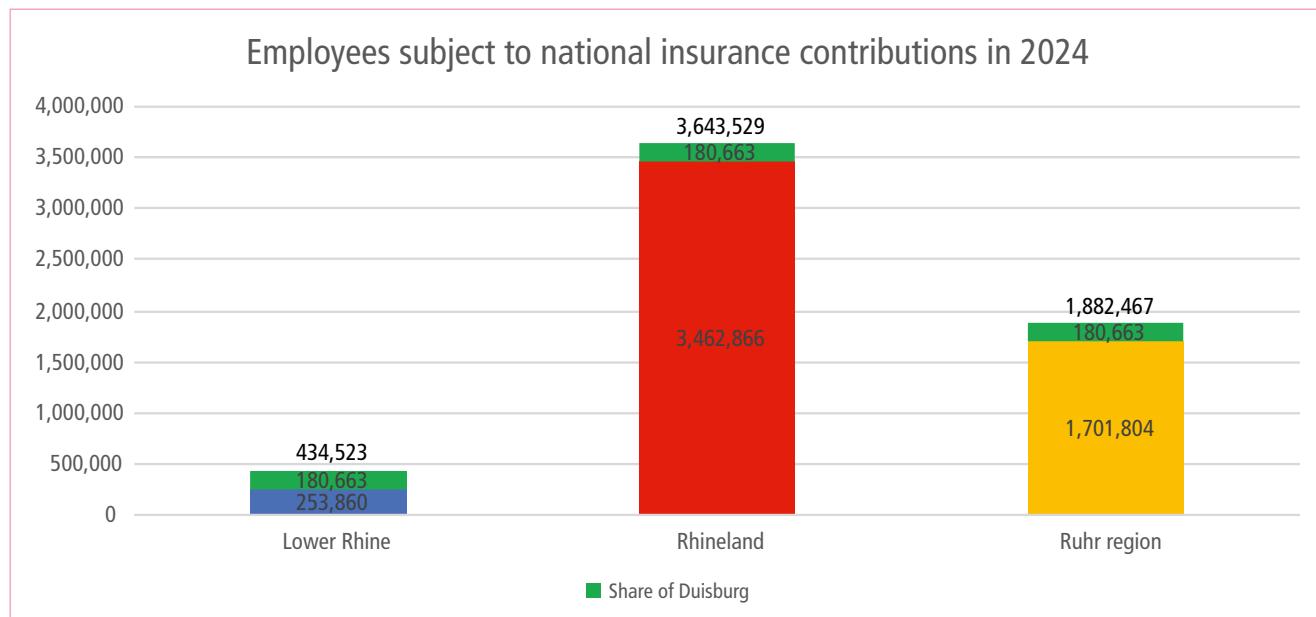


Figure 65: employees subject to national insurance contributions (Lower Rhine, Rhineland, Ruhr region) ⁸⁴

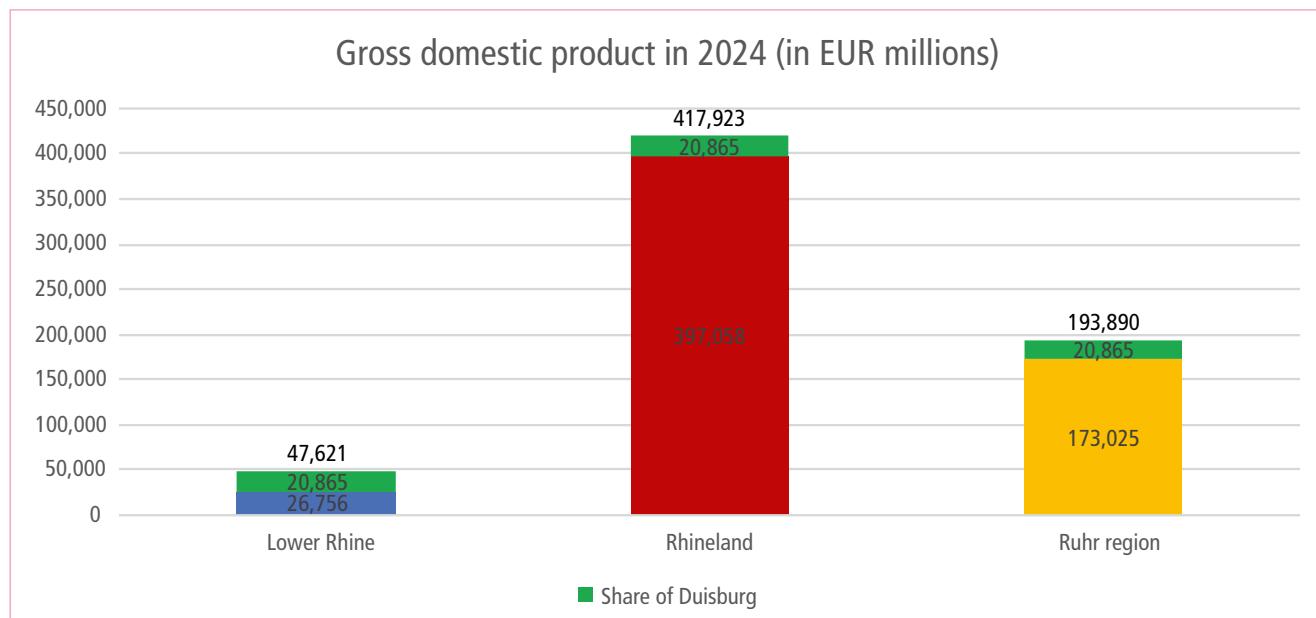


Figure 66: GDP (Lower Rhine, Rhineland, Ruhr region) ⁸⁵

With more than 3.5 million employees subject to national insurance contributions in December 2023, the Rhineland metropolitan region is one of Germany's most important economic locations. The region's key economic sectors include the chemical industry, mechanical engineering, process engineering and electrical engineering. Together, the Rhineland generates a gross domestic product of over EUR 417 million.

84 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

85 Source: State database of North Rhine-Westphalia © IT.NRW, Düsseldorf, 2024, as of: 10.2024

In December 2023, over 1.8 million people were in employment subject to national insurance contributions in the Ruhr region. The region offers a highly skilled workforce, a dense labour market, a well-developed transport network and a diverse higher education landscape. Historically, the economic importance of the Ruhr region was primarily shaped by the coal and steel industry. Today, alongside energy production, mechanical engineering and the chemical industry, knowledge-intensive services and high-tech companies play a central role in the region's identity. Together, the Ruhr region contributes over EUR 193 million to the gross domestic product.

In December 2023, around 430,000 people were in employment subject to national insurance contributions in the Lower Rhine region. The economic structure of the region is largely shaped by mechanical engineering, the chemical industry, the energy and logistics industries, and agriculture. Together, these sectors contribute to a gross domestic product of over EUR 47 million.

8.2 Cross-border cooperation with the Netherlands – The Euregio Rhine-Waal



Figure 67: Area of the Euregio Rhine-Waal⁸⁶

86 Source: Euregio Rhine-Waal, <https://www.euregio.org/page/20/arbeitsgebiet>

The City of Duisburg also maintains close contacts beyond its municipal and state borders. In the Rhine river basin and its tributary, the Waal, in the Netherlands, an important supra-regional association has been established: the Euregio Rhine-Waal. The Euregio Rhine-Waal was founded in 1993 and was the first cross-border public-law association in Europe.

The Euregio Rhine-Waal is a public-law association comprising approximately 55 municipalities and regional authorities, including the city of Duisburg. The stated aim is to improve and intensify cross-border cooperation in the economy and society.

The area covered by the organisation has grown considerably over the years and now extends over 8,663 km², home to around 4.2 million people. On the German side, the area of operation covers the cities of Duisburg and Düsseldorf and the districts of Wesel and Kleve. On the Dutch side, the Euregio includes a large part of the province of Gelderland with the areas of Arnhem-Nijmegen, West Veluwe, Zuid-West Gelderland, parts of North-East Brabant and the northern part of the province of Limburg (Figure 66).

8.3 Duisburg in the Rhineland metropolitan region

In connected regions such as the Rhineland, quality of life and economic opportunities are on the rise. The polycentric Rhineland Metropolitan Region (MRR) brings together districts, cities, chambers and institutions in the Rhineland to represent common interests and position itself as an important European economic region.⁸⁷

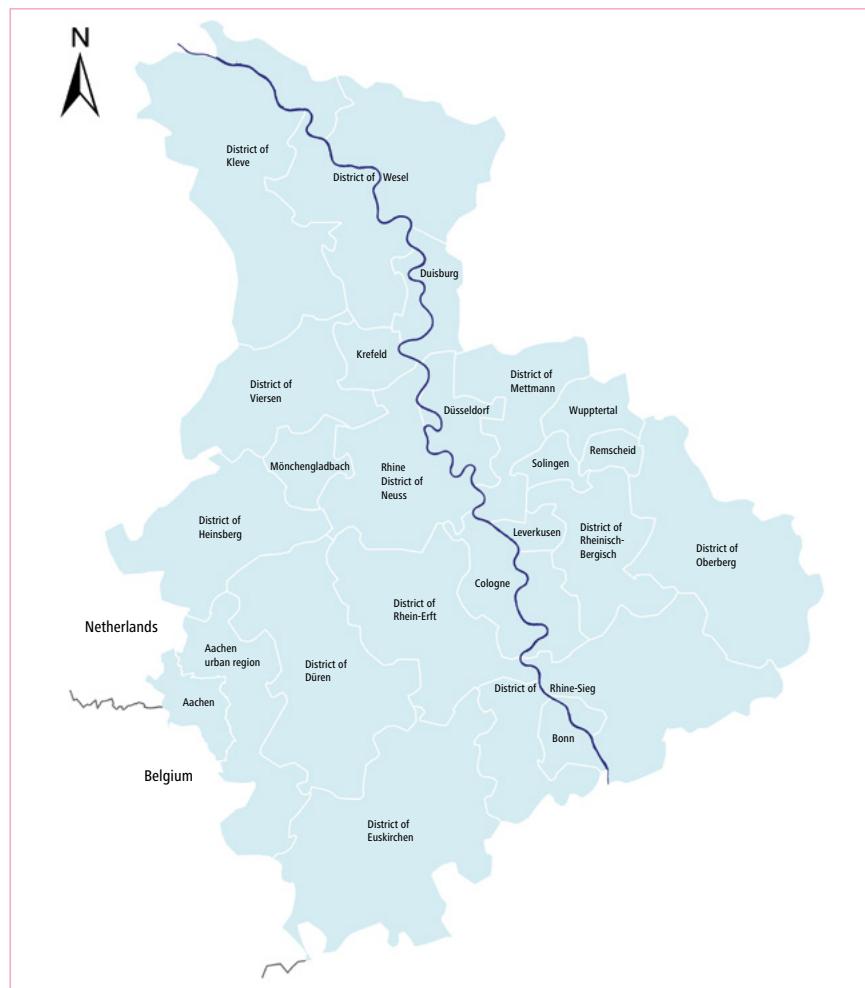


Figure 68: Map of the Rhineland Metropolitan Region⁸⁹

At around EUR 390 billion, the Rhineland generates approximately 12 % of Germany's gross domestic product – an economic power comparable to smaller European countries such as Austria. Its outstanding transport infrastructure, with inland ports, Rhine bridges, airports and motorways, and its research landscape, with 64 higher education institutions and ten clusters of excellence, offer ideal conditions for innovation and skills development.⁸⁸

The MRR plays a key role in regional development, strengthens cooperation between municipalities and chambers, and coordinates the region's positioning for political decisions. The focus areas of inter-municipal cooperation are energy and transformation, transport and infrastructure, and regional profiling. The aim is to keep the region competitive during processes of change such as the energy and transport transition and to further expand the economic strength of the Rhineland.⁹⁰

87 Source: <https://metropolregion-rheinland.de>

88 Source: <https://metropolregion-rheinland.de>

89 Source: Rhine Metropolitan Region, <https://metropolregion-rheinland.de>, as of: 12.2024

90 Source: <https://metropolregion-rheinland.de>

9. Duisburg steel industry



Duisburg is the centre of European steel production and an important business location in Germany. The city is home to several of Europe's largest steelworks and forms the heart of the German steel industry. With an annual crude steel production of over 16 million tonnes (as of 2023), Duisburg plays a crucial role in the value chain of numerous industrial sectors – from the automotive and mechanical engineering industries to construction.⁹¹

The steel industry is a central pillar of Duisburg's economy, generating

a total of EUR 5.3 billion in GDP with a production value of EUR 19.5 billion. It is directly and indirectly responsible for around 51,700 jobs. The importance of the industry extends far beyond its direct effects: while the steel industry itself generates a GDP of EUR 2.2 billion – equivalent to 10.4 % of the city's total GDP – its economic influence has a significant multiplier effect on other areas of the economy. For every euro of GDP generated in Duisburg's steel industry, another EUR 1.47 are generated in the rest of the German economy, and for every direct employee, there are almost two additional jobs outside the industry.⁹²

In addition, Duisburg's steel industry makes a significant contribution to public finances: it generates EUR 931 million in tax revenue each year, of which EUR 60 million remains directly in Duisburg, EUR 223 million goes to North Rhine-Westphalia and EUR 413 million accrues at federal level. A further EUR 232 million will go to other municipalities and federal states. In addition, the industry pays EUR 1.3 billion in social security contributions each year, underscoring its central role in social security systems.⁹³

The steel industry also occupies a leading position in comparison with other industries in Duisburg. With a direct GDP of around EUR 2.2 billion, it is the city's strongest economic industry. In terms of employment, it ranks third after public administration (around 19,600 employees) and the healthcare sector (just under 18,600 employees) with around 17,800 people directly employed. More than half of these employees (an estimated 56 %; more than 9,000 employees) live in Duisburg itself, which underscores the close economic ties between the industry and the city.⁹⁴

In addition, the steel industry is an important training sector. In 2019, 3.46 % of employees subject to national insurance contributions in the steel industry were apprentices. Based on current developments, it is estimated that this proportion will also be achieved in 2023, which means around 616 apprentices in the Duisburg steel industry. The industry, therefore, not only offers secure jobs, but also long-term prospects for young professionals.⁹⁵

In addition to its economic importance, Duisburg's steel industry is a driver of innovation in the field of climate-friendly production. By investing in hydrogen-based processes and modern production facilities, the industry is providing important impetus for the transition to a low-carbon industry.⁹⁶

91 IW Consult, 2025, <https://www.duisburg.de/microsites/wirtschaft/projekte-themen/Stahlstandort-Europa.php> and <https://www.iwkoeln.de/presse/pressemitteilungen/tillman-hoenig-benita-zink-stellenabbau-koennte-bundesweit-bis-zu-55000-arbeitsplaetze-kosten.html>

92 IW Consult, 2025

93 IW Consult, 2025

94 IW Consult, 2025

95 IW Consult, 2025

96 IW Consult, 2025

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