

An aerial photograph of a Danube river. A large blue cargo ship with a white deck is moving towards a lock on the left bank. The left bank is covered in dense green trees and has a sandy area near the lock. Several orange buoys are visible in the water. The number '23' is overlaid in a large, white, wavy pattern.

23

Key data on Danube navigation 2023¹

Transport volumes

6.0 million tons (–5.1%)	<ul style="list-style-type: none">• Import: 2.7 million tons (–20.9%)• Export: 2.0 million tons (+7.5%)• Transit: 0.9 million tons (+3.8%)• Domestic: 0.4 million tons (+158.1%)
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Transport performance

5.6 billion tkm (–5.9%)	• Within Austria: 1.2 billion tkm (–3.8%)
5,883 transportations (–8.1%)	• Outside Austria: 4.4 billion tkm (–6.4%)

Waterside transhipment at Austrian ports and transhipment sites

5.5 million tons (–2.5%)	<ul style="list-style-type: none">• Ores and metal waste: 1.6 million tons (–2.9%)• Petroleum products: 1.3 million tons (+41.7%)• Metal products: 0.7 million tons (–11.6%)• Agricultural and forestry products: 0.6 million tons (–32.6%)• Fertilisers: 0.5 million tons (–14.3%)• Crude and manufactured minerals, building materials: 0.5 million tons (+3.9%)• Other goods: 0.3 million tons (–8.6%)
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Vessel units locked through Austrian Danube locks

72,964 vessel units ² (–4.1%)	<ul style="list-style-type: none">• Freight transport: 32,001 units (–9.4%)• Passenger transport: 40,963 units (+0.5%)
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Passenger transport (including estimation)

1.19 million passengers (+24.6%)	<ul style="list-style-type: none">• Liner services: 660,000 passengers (+26.9%)• River cruises: 440,000 passengers (+25.7%)• Non-scheduled services: 90,000 passengers (+5.9%)
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Accidents

17 traffic accidents with damage	<ul style="list-style-type: none">• Personal injuries: 0 deaths, 0 injured indeterminate degree• Damage to property: 13 incidents with damage to riverbanks and facilities, 5 ship to ship, 0 ships sunk
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Availability of the waterway

361 days	• Closures due to high water: 4 days
15 year average: 359 days	• Closures due to ice: 0 days

¹ Changes from 2022 are given as percentages in brackets

² Convoys and individual vessels

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The Danube as an opportunity A way out of the climate crisis



LEONORE GEWESSLER
Federal Minister in the Federal Ministry
for Climate Action, Environment, Energy,
Mobility, Innovation and Technology

Hardly any other field of political and social action is undergoing such fundamental changes as the transport sector. Changes that are not only an expression of technological progress, but also – against the backdrop of the omnipresent climate crisis – of the urgently needed will to actively help shape a sustainable future. Today, in all areas of our lives, we can see how consideration for the environment and climate protection is increasingly becoming a matter of course in our thoughts and actions, planning and economic activity. This makes us proud and confident that all of us in politics, business and society can ensure a future worth living for generations to come.

I am convinced that nature itself offers us the best solutions to the climate crisis, which we must now pursue with courage, determination and a sense of responsibility. Under the umbrella of the European Danube Region Strategy and with many national and cross-border initiatives, we are working together with viadonau to strengthen the shift of transport to waterways, modernise the waterway infrastructure and provide a real answer to the question of sustainable transport solutions. We have already implemented many projects, e.g. on the suitability of certain groups of goods for waterway transport, the cross-border COMEX² project for the ongoing digitalisation of the Danube and our funding programme for climate and environmentally friendly shipping.

The international FAIRway Danube II project, which is co-financed by the European Union, started at the end of 2023 and is one of the largest modernisation projects ever on the Danube. We are joining forces with the Danube riparian states to send a strong signal in favour of our sustainable development goals on the waterway. This proves once again that we are doing our homework for a climate-friendly tomorrow with great commitment and passion and are utilising the opportunities that the waterway offers us. As a natural wonder that is also an efficient mode of transport, the Danube shows what really matters and shows the way into the future with its strength and durability.

Progress with heart and ideas

Our vision of an integrated river

Perhaps you feel the same way when you are travelling on the Danube: standing on the banks, enjoying the expanse of the river, you can literally feel the movement, the life and the energy, and you immediately realise the great importance of the river for both people and the environment. To us, developing the Danube's invaluable ecological and social added value with meaning and purpose is more than just fulfilling a duty. Our hearts beat for the river and our professional minds are constantly thinking about its future. Whether it's through our daily commitment to lock and route maintenance or the ambitious goals of our diverse project work – we are always striving for progress and sustainable improvement for a modern, sustainable and climate-friendly waterway.

Every step forward starts with an idea. At viadonau, we take a holistic approach to the river and develop it in an integrative way. This means that we bring interests together and create solutions from the intersection of the diverse requirements for a responsibly modernised waterway by developing sustainable future prospects for people, nature and the economy. Solutions that enable us to approach our daily work with the same sense of ecological responsibility as we do the goals of our nature conservation and modernisation projects. With this future-oriented mindset, we are equipping our locations with modern photovoltaic systems, for example, and are continuously improving our environmental performance and energy independence, while at the same time modernising berths for freight shipping and equipping them with the latest shore-side power systems as part of cross-border projects – most recently in Linz, Wildungsmauer and soon also in Vienna. It is this holistic concept of sustainability that underpins our idea of a future-proof Danube and that enables us to provide the waterway of tomorrow as a reliable stabilising factor in the turbulent transformation of the European transport network.

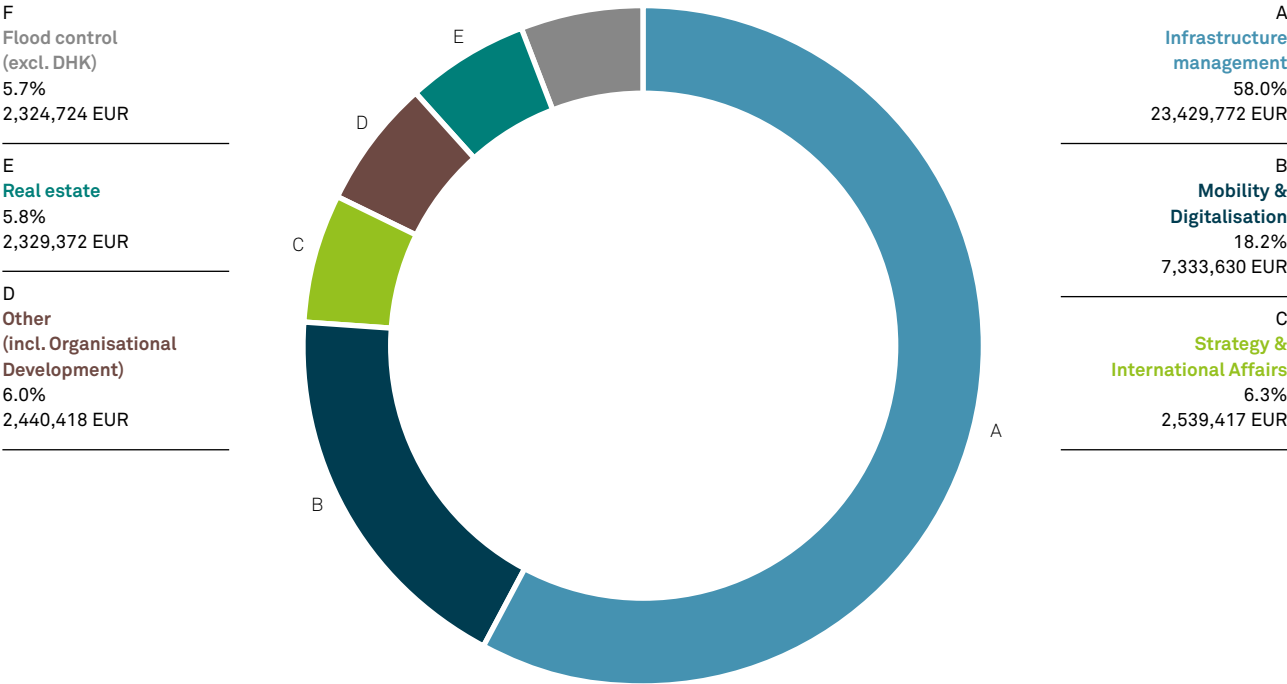


HANS-PETER HASENBICHLER
Managing Director
of viadonau

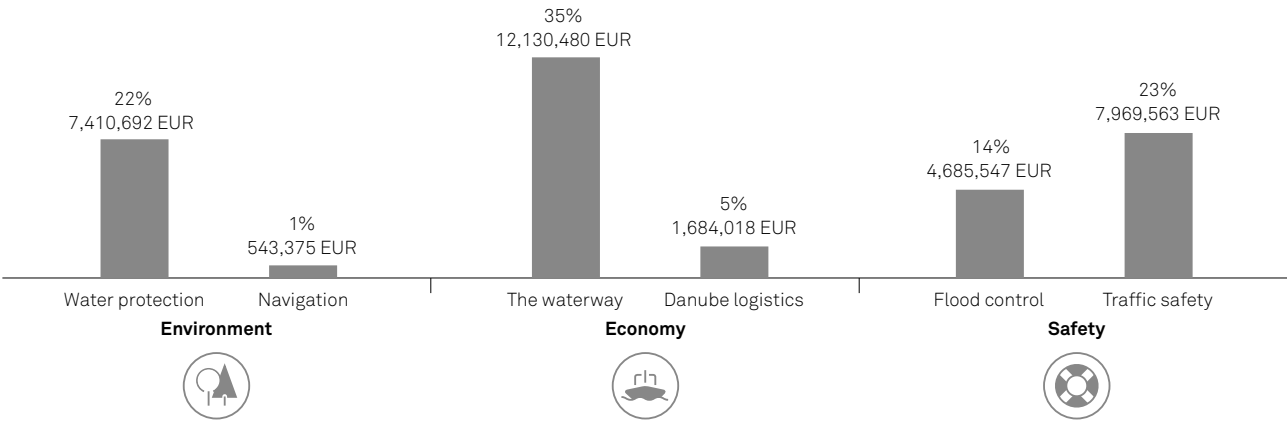
FIGURES DATA FACTS

Costs per core tasks and impact scope viadonau 2023

Costs of core tasks



Costs per impact scope



BALANCE SHEET VIADONAU

Top trends: nature, energy, climate 'Greening' of the waterway continues

viadonau stands for life, dynamism and development on the Danube and this is reflected in a wide range of activities. The most important milestones and successes in 2023 clearly show that we are shaping the future of the river with modernisation, renaturation, climate protection and innovation.

On course with the new Danube 2030 Action Programme: the Danube 2030 Action Programme, which was developed together with experts from shipping, nature conservation and research institutions and published in spring 2023, provides the Ministry of Climate Protection and viadonau with a clear roadmap for the development of the river as a living natural space and modern waterway.

Synergies for environmentally friendly ship technology solutions: The Horizon Europe Innovation Action SYNERGETICS was launched in Duisburg at the beginning of February. viadonau is involved with its comprehensive expertise in ship technology and the development of sustainable waterway management and is providing the Bad Deutsch-Altenburg push boat for this purpose. The new ship will be used to test the possibilities of energy-saving ship operation and the low-CO₂-emission fuel HVO.

Nature conservation with a "science-to-people" approach: The Horizon Europe project DANUBE4all was launched in mid-March 2023. viadonau is working with the Danubeparks association (Network of Protected Areas) on renaturalisation projects in the Paradeisinsel and Orther Arm areas of the Danube in Lower Austria.

First shore power terminals for cargo ships in operation: Since 2023, cargo ships have been able to "refuel" with electricity at upgraded berths in Linz and Wildungsmauer and dispense with diesel generators. The "Shore-side power for inland waterway vessels" project was launched on the initiative of the Ministry of Climate Protection. The systems were installed as part of the EU co-financed project "FAIRway works! In the Rhine-Danube Corridor" project. The initiative was also presented at the world's largest logistics trade fair "transport logistic 2023" in Munich in mid-May.

Starting signal for FAIRway Danube II: With a total budget of around 70 million euros, the FAIRway Danube II project was officially launched in Vienna at the end of November 2023. The most important mission objectives on the Danube: modern labelling of the waterway, upgrading of gauging stations and further upgrading of the survey fleets.

Historic refurbishment in Vienna/Nussdorf: In 2023, the second stage of refurbishment was implemented on the former lock building and current headquarters of the City of Vienna – Vienna Waterways (MA 45) in Vienna/Nussdorf. The result, modelled on Otto Wagner's original, is a successful balancing act between historical appearance and contemporary use.



"In the annual review of viadonau's many activities, it becomes more and more evident: for us, the Danube represents valuable nature, an economic opportunity and a future, as well as a popular destination for excursions. Over 900,000 cyclists in 2023 on the Danube cycle path between Passau and Hainburg confirm its important role as a leisure and recreational area."

SABINE GANSTERER
Projects Department

Freight transport on the Austrian Danube 2019–2023



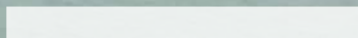


2023



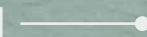
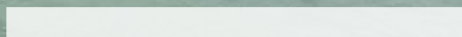
6,047,133 t

2022



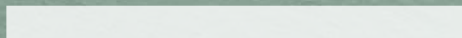
6,374,092 t

2021



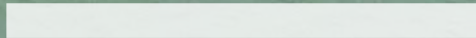
8,270,869 t

2020



8,246,781 t

2019



8,511,553 t

Minimum continuously available fairway depths on the free-flowing stretches of the Danube 2023

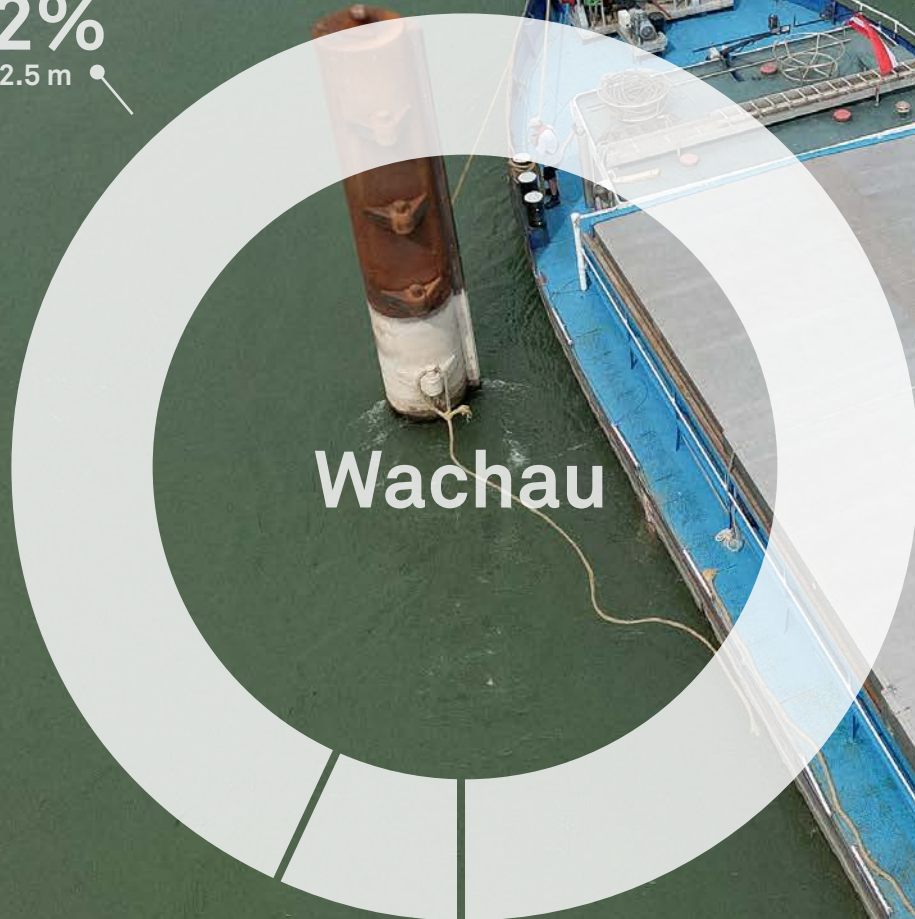
93.2%

above 2.5 m

Wachau

6.8%

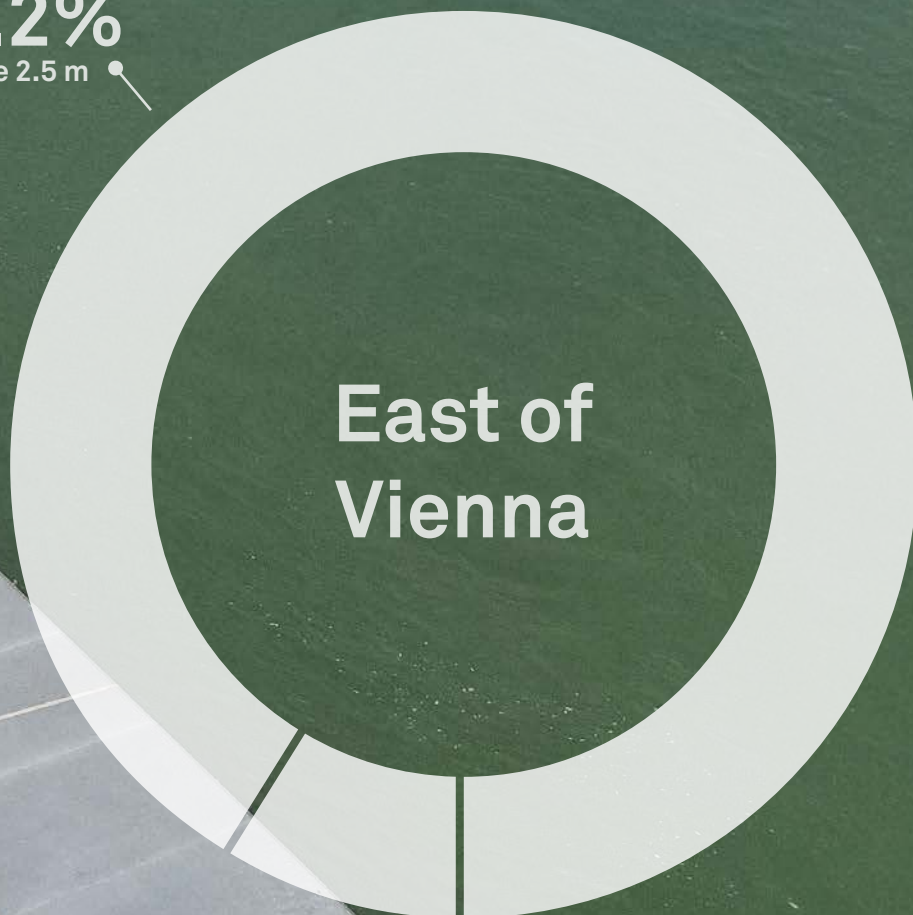
below 2.5 m



91.2%
above 2.5 m

**East of
Vienna**

8.8%
below 2.5 m



Locked-through vessel units
2019–2023



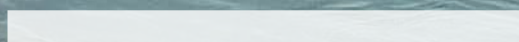


2023



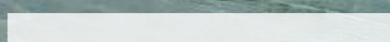
• 72,964

2022



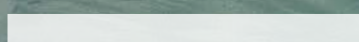
• 76,058

2021



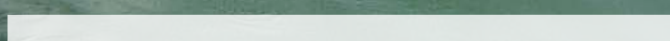
• 56,956

2020



• 52,076

2019



• 98,234

CUSTOMER SATISFACTION: INFRASTRUCTURE

Top marks for fairway quality in the Danube region



“The foundation of a high-quality waterway is a modern, professional service. Our regular survey of customers shows that our lock service ensures a high level of satisfaction in waterway traffic thanks to its reliability and expertise.”

KATA SEHER
Strategy & Organisational Development

The satisfaction of commercial users of the waterway, i.e. freight and passenger shipping, is an important driver of effective service provision for viadonau. For this reason, an annual customer survey is conducted to be able to initiate and implement further improvements to the waterway infrastructure services operated by viadonau in a user-friendly way. 33 responses were received from the shipping sector in the 2023 customer survey. 58% of the responses came from ship captains, 36% from ship owners and 6% from others.

Among other things, the survey assesses the quality of the maintenance of the navigation channel in the Austrian section of the Danube, i.e. the rating for viadonau's maintenance dredging. This was given an average grade of 1.4 for 2023 (2022: 1.3) on a school grading scale of 1 to 5, i.e., consistently rated “very good” and “good”. As in previous years, this makes viadonau the waterway infrastructure operator with the highest rating of all Danube riparian states among waterway users. The chart on the opposite page shows the detailed results of the current customer survey.

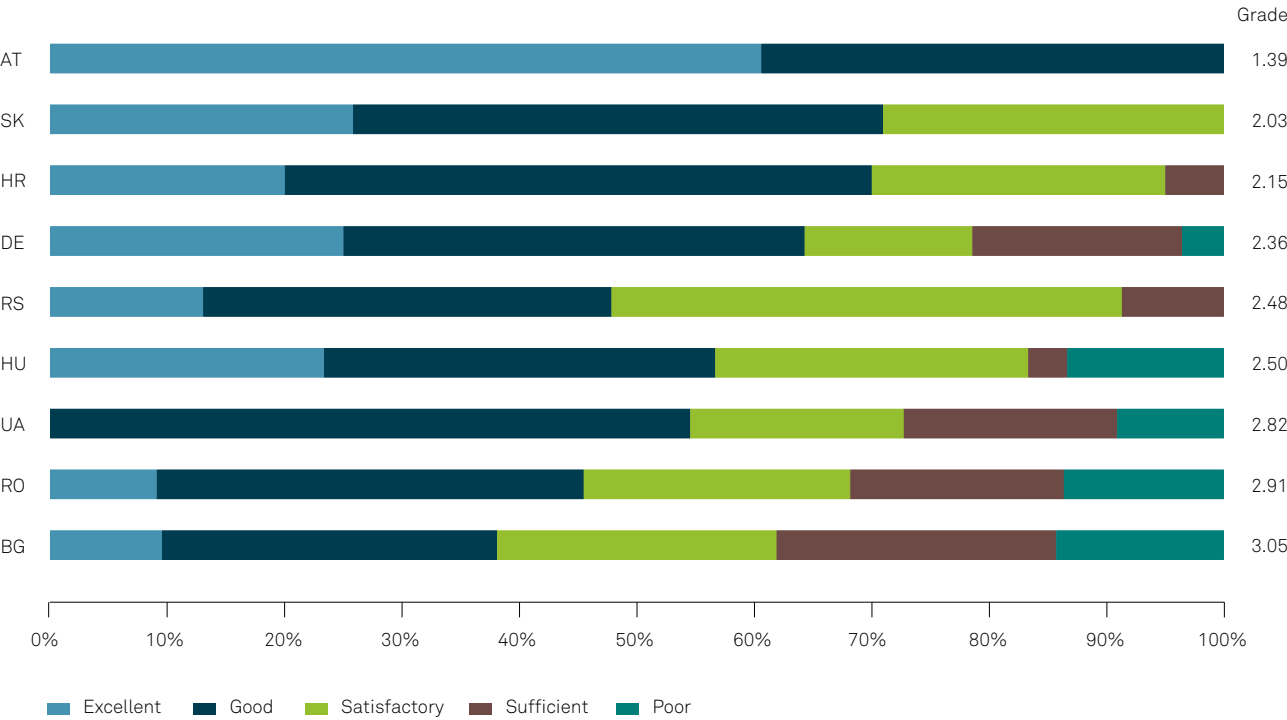
The operation of the ten Danube locks in Austria by viadonau and the condition of the facilities were also rated very highly: The customer survey awarded a score of 1.7 (2022: 1.6) for the support provided by lock supervisory staff and a score of 1.9 (2022: 1.8) for the lock facilities themselves (safety, equipment, locks).

The visibility of the fairway buoys to mark the fairway was rated 1.5 (2022: 1.4) in the current customer survey, while the positioning of these fairway watermarks was rated 1.7 (2022: 1.5). In summer 2023, a second, energy-efficient push boat was put into operation, which enables optimised manipulation of floating fairway markers due to reduced response times when repairing damage.

The assessment of the availability and equipment of public berths owned by the federal government is also part of the viadonau customer survey. On average, these were rated 2.3 in the current survey (2022: 2.2). In 2023, shore power facilities were built at the dry goods area Linz-Mitte (river km 2,129.0 R) and at the Wildungsmauer landing stage (river km 1,895.0 R), which was newly adapted for large ships, and received a score of 1.4 in the customer survey. Further projects are being planned in Vienna, Aschach and Krems an der Donau. Shore power systems are implemented by viadonau in conjunction with additional structural upgrading projects, in which safer mooring and access structures such as dolphins and bridges are installed.

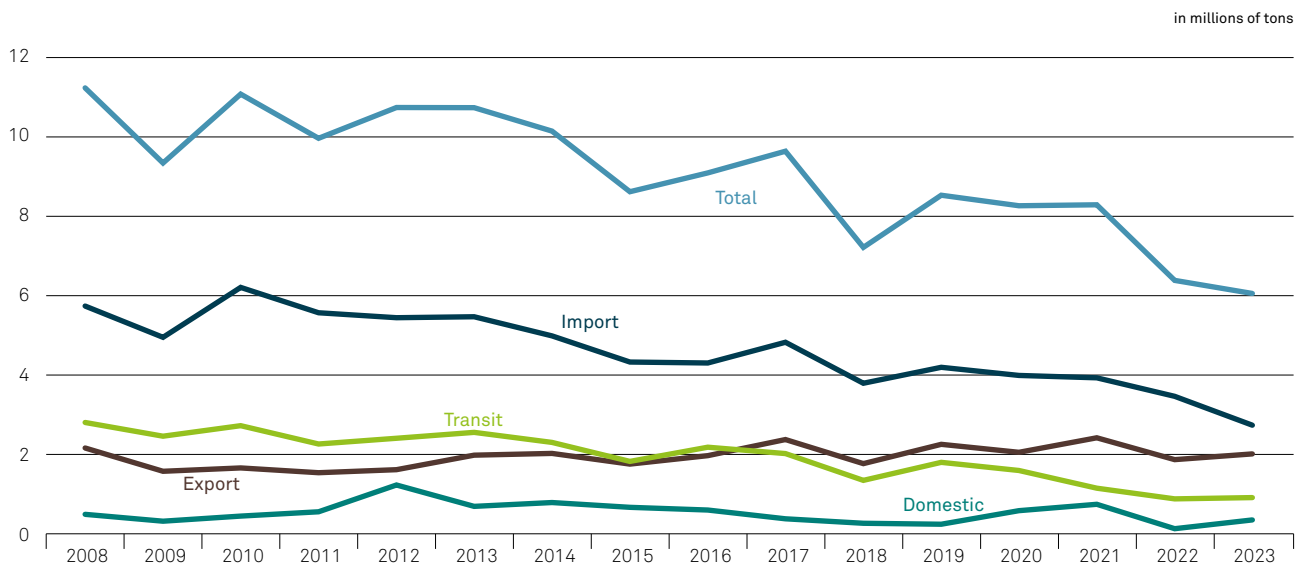
FIGURES DATA FACTS

Waterway infrastructure quality in the Danube countries 2023



FIGURES DATA FACTS

Freight traffic on the Austrian Danube 2009–2023



Transport volumes in tons	Import	Export	Transit	Domestic	Total
2023	2,742,020	2,017,661	924,548	362,904	6,047,133
2022	3,465,637	1,876,953	890,888	140,614	6,374,092
2021	3,930,863	2,424,784	1,159,264	755,958	8,270,869
2020	3,989,282	2,060,982	1,601,604	594,913	8,246,781
2019	4,193,338	2,258,611	1,805,896	253,708	8,511,553

TRANSPORT VOLUMES

6 million tons on the Austrian Danube Sharp decline in imports

In total, just over 6 million tons of goods were transported on the Austrian Danube in 2023 – the lowest result for many years, which reflects the unfavourable general conditions: the ongoing war in Ukraine since 2022, and the after-effects of previous years characterised by low water levels had a noticeable impact on freight shipping in Austria in 2023.

However, the total cargo volume decreased only slightly by 0.3 million tons or 5.1% compared to the previous year, which is due to the sharp decline in imports as the dominant transport sector by 20.9% to 2.7 million tons. A closer look at import transport reveals that imports from the East (–22.7%) fell much more sharply than imports from the West (–13.5%).

All other transport sectors increased compared to 2022: export transport rose by 7.5% to 2 million tons, transit transport by 3.8% to 0.9 million tons and domestic transport by as much as 158.1% to 0.4 million tons.

Due to the sharp drop in import volumes and the increase in export, transit and domestic transport volumes, the share of import volumes in the total volume fell to 45.3%. By contrast, export, transit and domestic volumes increased their shares to 33.4%, 15.3% and 6% respectively.

Transport performance on the Austrian Danube decreased in line with the decline in total transport volumes. While a transport performance of 5.9 billion ton-km was calculated in 2022, this fell by 5.9% to 5.6 billion ton-km in 2023.

The average transport distance per ton fell from 902 to 888 km in 2023 compared to 2022. The number of transport operations fell from 6,402 to 5,883.



“Climate change and war are putting pressure on freight shipping on the Danube. Nevertheless, the sharp increase in the transport of petroleum products and fuels compared to 2022 shows that now more than ever, the waterway is proving its backbone function in the European transport network.”

BETTINA MATZNER
Transport Development

PORT TRANSHIPMENT

Port handling has hardly changed

Various developments

- Strong year-on-year increase in waterside transshipment in Linz and Vienna, decline in the other ports
- voestalpine industrial port remains the most important Danube port in Austria

In 2023, a total of around 5.5 million tons of goods were handled by water in the Austrian Danube ports and transshipment sites. Compared to the previous year, port transshipment fell slightly by 2.5% or 138,332 tons. In terms of the proportion of port transshipment, there were different developments in the ranking of the individual ports and transshipment sites.

In 2023, the voestalpine industrial port in Linz once again recorded the largest transshipment volume in a comparison of ports along the Austrian Danube. In terms of total volume, 44.7% was handled on the waterside at the voestalpine industrial port. This corresponds to a transshipment volume of around 2.5 million tons and a slight decrease of 1.1%.

The Port of Vienna, which comprises the ports of Freudenau, Lobau and Albern, recorded an increase of 29.3% this year. After a significant drop in the previous year, the Port of Vienna was therefore able to catch up with transshipment volumes of almost one million tons and is back in second place.

The other ports and transshipment sites include the waterside transshipment volumes from Aschach, the heavy goods port in Linz, Pöchlarn, Pischelsdorf, Korneuburg and two bunker sites in Vienna. Around 0.8 million tons were handled in this group of ports, which corresponds to a year-on-year decline of around 25%. The other ports and transshipment sites therefore took third place in the ranking with a share of 14.3%.

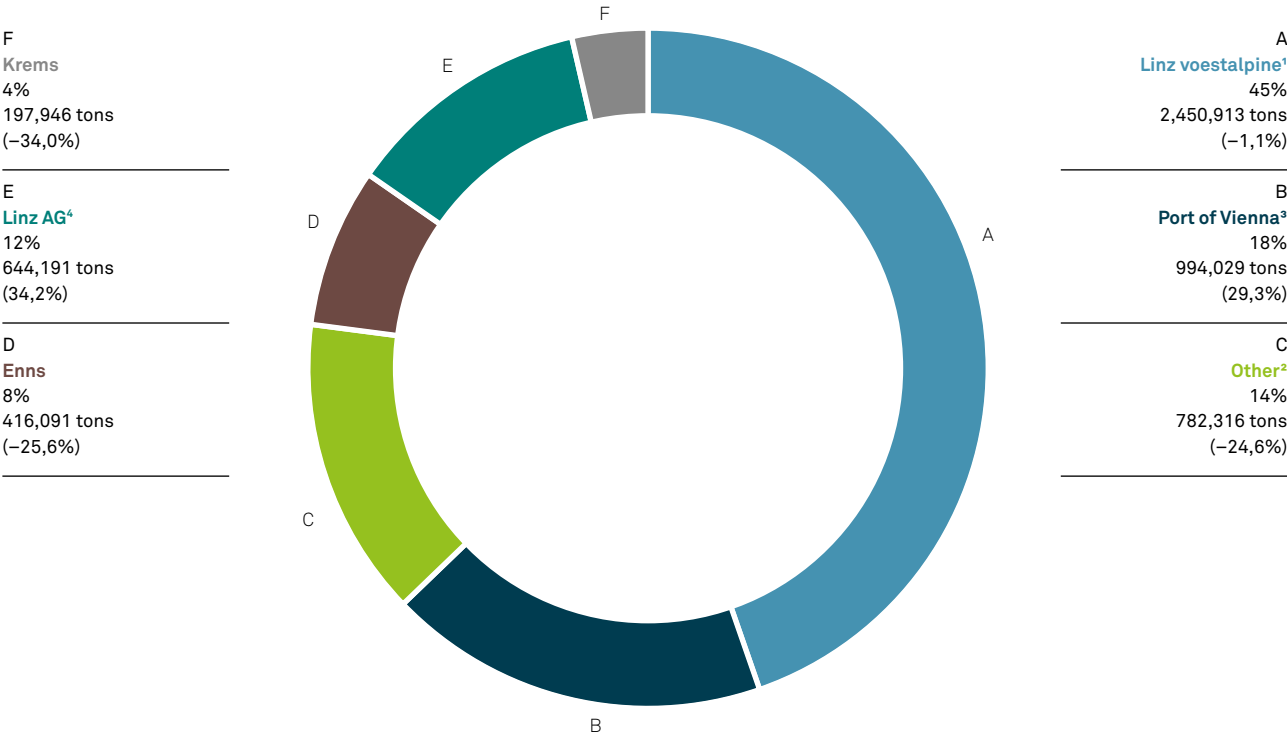
With a relative decline of 25.6% (143,000 tons in absolute terms), the Port of Enns recorded a significant slump in the volume handled on the water side in 2023.

The ports of Linz AG (commercial and oil terminals), on the other hand, recorded a significant increase of 34.2% compared to 2022. This therefore represents the strongest relative growth and was reflected in a waterside transshipment of 0.6 million tons.

The Port of Krems achieved a volume of around 0.2 million tons handled on the waterside and thus had the strongest relative decline of 34% of all Austrian ports and transshipment sites.

FIGURES DATA FACTS

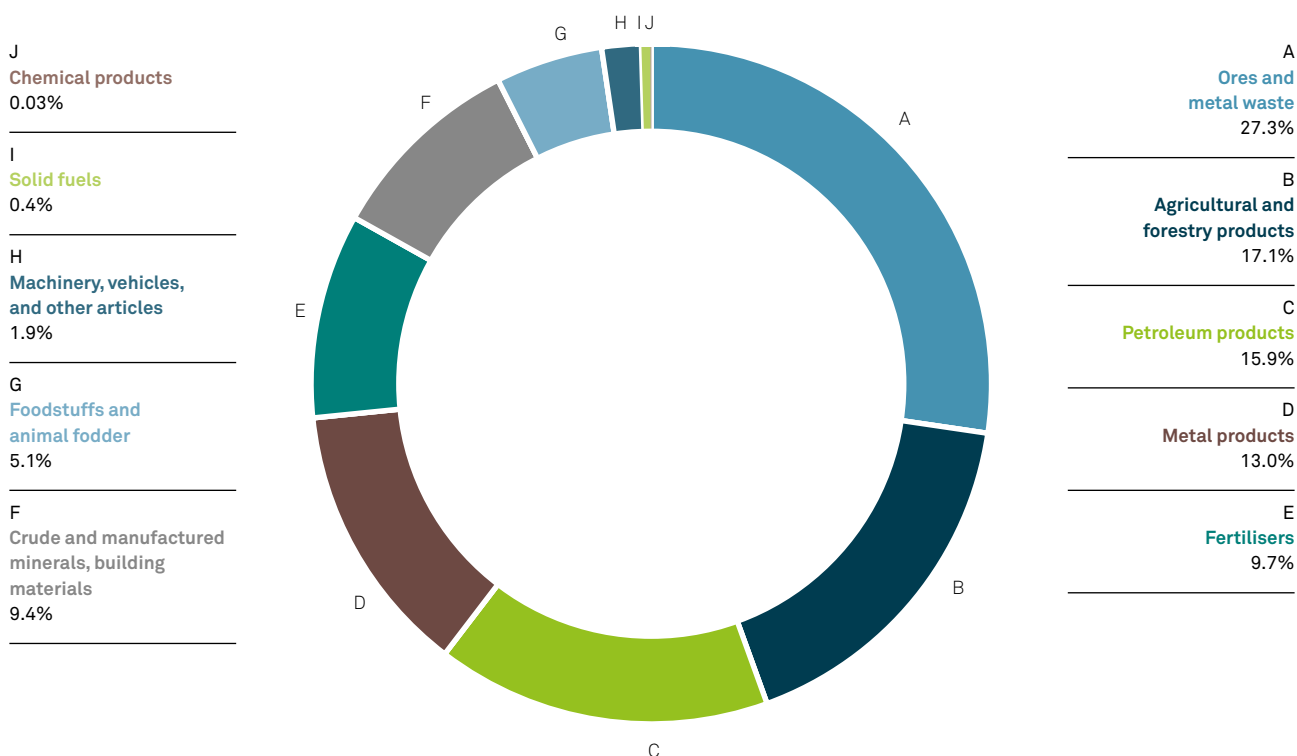
Waterside transshipment at Austrian Danube ports and transshipment sites 2023



¹ Including waterside transshipment at the facilities of Industrie Logistik Linz GmbH.
² Other ports and transshipment sites include: Aschach, Schwerlasthafen Linz, Pöchlarn, Pischelsdorf and Korneuburg as well as two bunker berths in Vienna.
³ The three ports of Freudenau, Albern and Lobau (oil port) have been grouped to compile the total turnover figures for the Port of Vienna.
⁴ Data from both the commercial port and the oil port in Linz have been grouped to compile the total turnover figures for the Port of Linz.

FIGURES DATA FACTS

Transport volumes by commodity groups on the Austrian Danube 2023



in tons

Goods classification according to NST/R*	Domestic	Import	Export	Transit	Total 2023	Change
Agricultural and forestry products	9,710	541,538	37,272	448,320	1,036,840	-15,1%
Foodstuffs and animal fodder	2,004	155,534	100,422	50,233	308,193	-4,2%
Solid fuels	-	-	-	26,079	26,079	15,7%
Petroleum products	349,296	107,735	505,188	-	962,219	19,3%
Ores and metal waste	-	1,607,448	13,671	31,495	1,652,614	-1,8%
Metal products	-	136,255	578,103	72,405	786,764	-17,2%
Crude and manufactured minerals, building materials	-	160,281	296,627	114,244	571,152	1,2%
Fertilisers	1,425	25,159	465,564	95,715	587,864	-13,4%
Chemical products	-	-	-	2,109	2,109	-58,9%
Machinery, vehicles and other articles	469	8,062	20,814	83,947	113,293	-6,2%
Total	362,904	2,742,011	2,017,663	924,548	6,047,126	-5,1%

* NNST/R = Standard Goods Classification for Transport Statistics/revised.

Source: Statistics Austria, adapted by viadonau

COMMODITY GROUPS

Slight reduction overall Increase in petroleum products

In 2023, the total transport volume on the Austrian section of the Danube was 6 million tons. This corresponds to a decrease of 5.1% or around 330,000 tons compared to the total volume in 2022.

The transport volume of agricultural and forestry products amounted to 1 million tons – a drop of around 180,000 tons. With a decrease of around 240,000 tons, import volumes fell the most drastically. However, as in previous years, this commodity group remained in second place with a share of 17.1% of the total volume transported. Around 590,000 tons of fertilisers were transported in 2023 – a decrease of 13.4%. This is mainly due to a 82,000 ton drop in imports. This commodity group accounted for 9.7% of the total transport volume. This corresponds to a decrease of one percentage point. Foodstuffs and animal fodder transports took seventh place in the ranking with 308,000 tons and a drop of 4.2%. This commodity group accounts for 5.1% of the total volume on the Austrian Danube.

As in previous years, the ores and metal waste commodity group was in first place in the ranking with 1.7 million tons. The share of the total volume increased by 0.9% and amounted to 27.3%, but around 2% less ores and metal waste were transported on the Austrian Danube than in 2022. Metal products accounted for around 800,000 tons or 13% of the transport volume. With a drop of 17%, this commodity group recorded a decrease of around 160,000 tons compared to 2022. The shares of the machinery, vehicles and other articles (1.9%), solid fuels (0.4%) and chemical products (0.03%) commodity groups were all lower than 5%. While the transport volumes of machinery, vehicles and other articles and the commodity group of chemical products fell by 6.2% and 58.9% respectively compared to the previous year, the solid fuels commodity group recorded an increase of 15.7%, as in the previous year.

With an increase of 19.3% or 155,000 tons compared to the previous year, petroleum products increased in volume to 962,219 tons – this corresponds to 15.9% of the total volume. An increase of almost 200% in domestic transport compared to 2022 should be emphasised here. This commodity group was therefore able to make up one of the places lost in the previous year and reached third place in the ranking in 2022. The crude and manufactured minerals commodity group remained stable at 570,000 tons in 2023 and an increase of 1.2%. Although the import rate fell by 24.1%, the 29.7% increase in the export rate fully compensated for this decline. With a share of 9.4% of the total volume, this commodity group of goods took sixth place.

- Ores and metal waste traditionally in first place
- Petroleum products and metal products swap places
- Increases in the petrol products and solid fuels commodity groups

PASSENGER TRANSPORT

Passenger transport continues to recover

Strong increase in passenger numbers

- 25.7% more passengers on river cruises
- Increase of 26.9% for scheduled services and 5.9% for non-scheduled occasional services
- Three new cruise ships in use on the Danube

In 2023, passenger transport recorded a sharp increase in passenger numbers. Around 1,190,000 passengers were carried on the Austrian section of the Danube, an increase of 24.6% compared to 2022. The figure is only 13.8% below the 2019 figures.

Despite the war in Ukraine and its negative impact on tourism in the Danube region, river cruises recorded around 440,000 passengers in 2023 (+25.7% compared to 2022), which is only 17.8% below the 2019 figures. Compared to 2022, the number of cabin vessels operating on the Austrian section remained roughly the same with 158 vessels (–0.6%), three of which were new vessels. These completed a total of 4,742 trips (+0.6%). The transport capacity of river cruises was 26,976 passenger seats – on average, this corresponds to 171 passenger seats per ship.

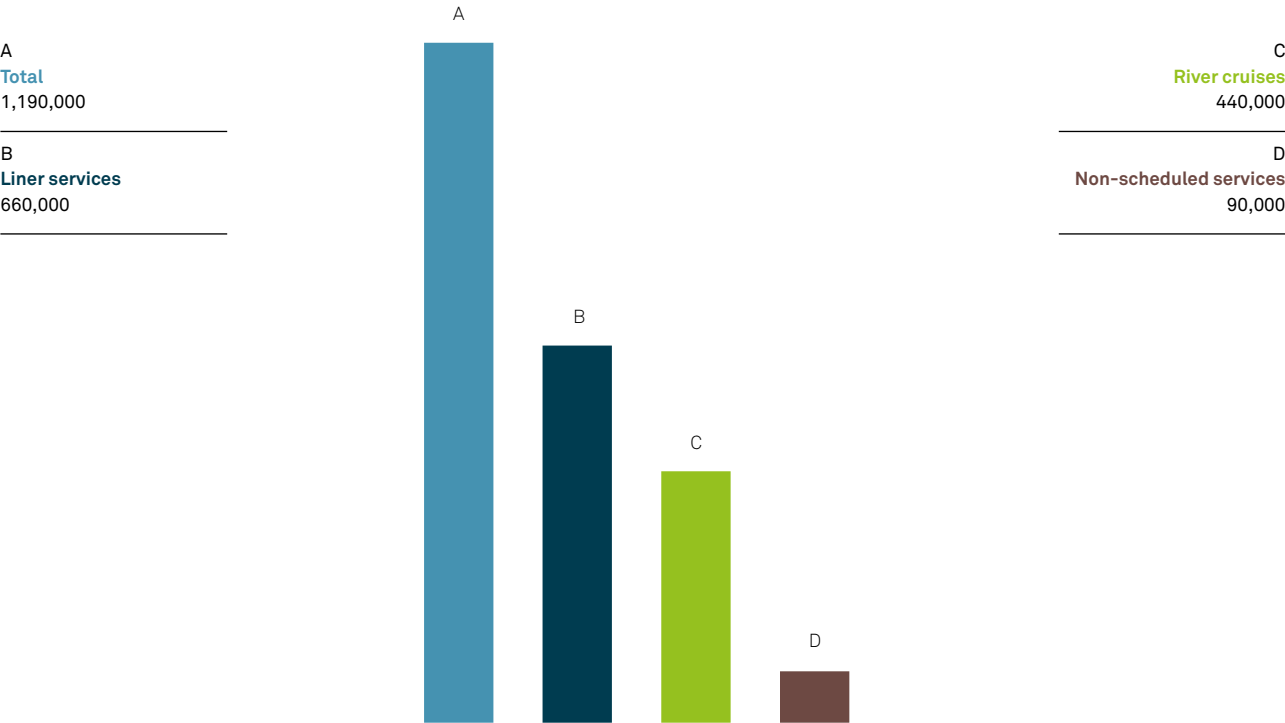
Around 660,000 passengers (+26.9%) were transported on scheduled services in 2023. This is 10.8% below the 2019 figures. DDSG Blue Danube Schiffahrt GmbH reported a total of 236,000 passengers (+23.6%) for its scheduled services in the Wachau region and Vienna. The two Twin City Liners carried 176,000 passengers (+23.1%) between Vienna and Bratislava, and Fähre Dürnstein GmbH & Co KG reported 18,039 passengers (+2.2%) on its Danube Taxis in the Wachau region. A further 3,075 passengers (+34.5%) took advantage of the services offered by Donauschiffahrt Ardagger GmbH with the MS Donaunixe and the MS Maria.

With around 90,000 passengers transported in 2023, non-scheduled services achieved growth of 5.9% compared to the previous year and are now only 14.3% below the figures for 2019. DDSG Blue Danube Schiffahrt GmbH transported 51,000 passengers (+8.5%) on themed, special and charter trips and the ships of Donauschiffahrt Ardagger GmbH carried 6,053 passengers (+27.9%) on non-scheduled services. Fähre Dürnstein GmbH & Co KG reported 3,096 passengers on non-scheduled services and 2,946 passengers (+37.0%) were transported on the MS Carnuntum by the Event Schiffahrt Haider e.U. Finally, Nostalgie Tours, Video & Consulting GmbH reported 2,374 passengers on non-scheduled services on the MS Mariandl.

Passenger volumes for companies that carried fewer than 2,000 passengers on scheduled and non-scheduled services in 2023 is not shown separately here. No figures are available for the reporting period for other companies operating scheduled and non-scheduled services on the Austrian section of the Danube.

FIGURES DATA FACTS

Passengers on the Austrian Danube 2023*

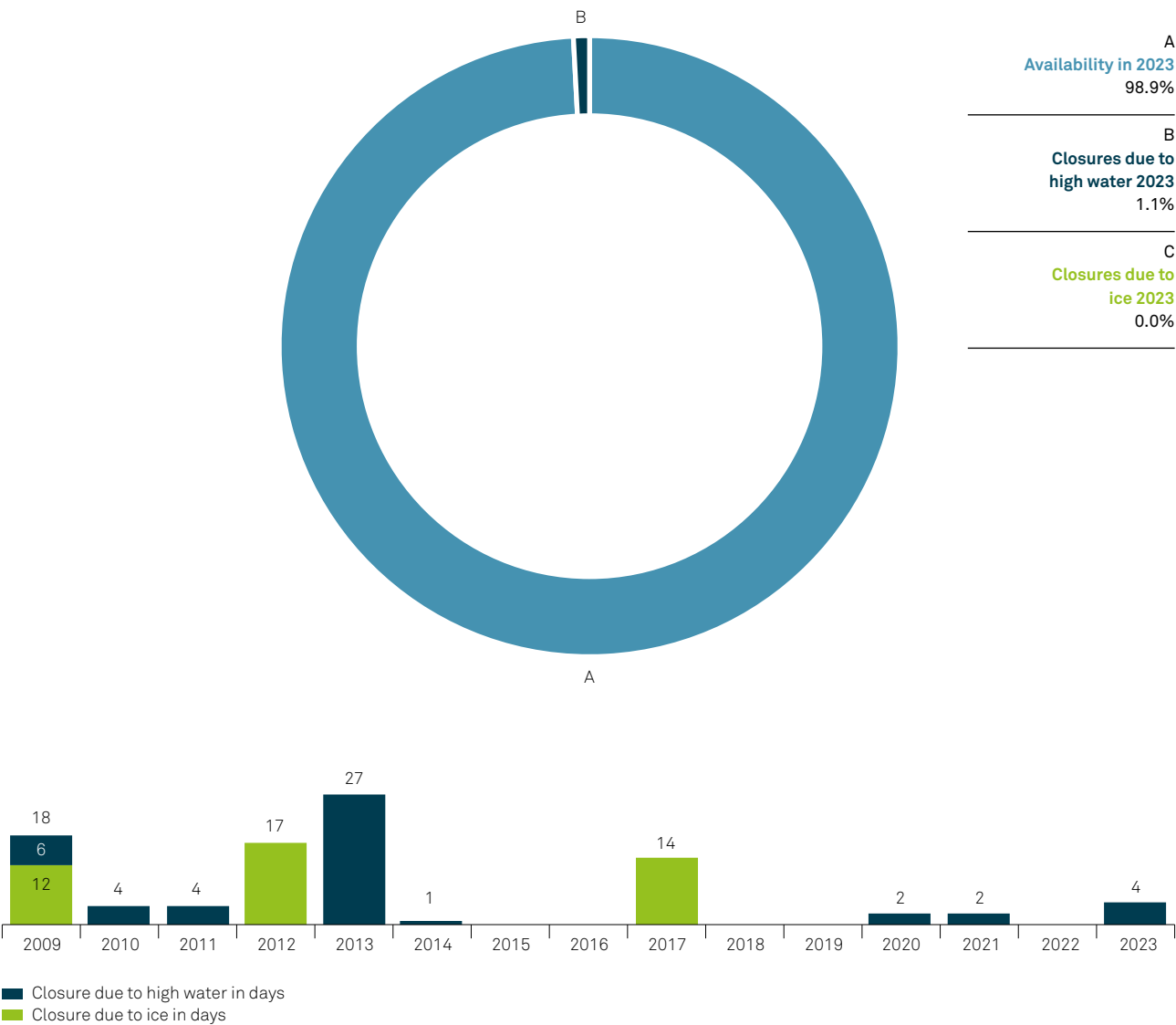


* Since passenger traffic on the Danube in Austria has not been statistically recorded since 2003 due to a change in the legal basis, the passenger figures for scheduled and non-scheduled occasional transport also include estimates based on the assumption of an average capacity utilisation rate of 40% for day excursion vessels. The calculation of the total number of passengers on cabin vessels is based on the number of trips made by these vessels through the Aschach and Freudenau locks. Usually, an average capacity utilisation of 75% is assumed, with a 30% deduction for double counting. However, due to the strict coronavirus restrictions, an average capacity utilisation of only 40% was assumed for 2020 and 2021 and 60% for 2022 due to the effects of the war in Ukraine. An average capacity utilisation of 75% is assumed again for 2023.

Sources: 1. Wiener Bootstaxi, Ahoi Wachau – Ahoi Reichl Geith OG, Central Danube Region Marketing & Development GmbH, DDSG Blue Danube Schifffahrt GmbH, Donauschifffahrt Ardagger GmbH, Donauschifffahrt Wurm & Noé GmbH & Co. OHG, Donau-Taxi Wachau – Fähre Dürnstein GmbH & Co KG, Event Schifffahrt Haider e.U., Genuss-Schifffahrt GmbH, Motorboottaxi Wachau, Nostalgie Tours, Video & Consulting GesmbH, Schiffmühle Orth/Donau, Slovak Ship-ping and Ports – Passenger Shipping Inc., viadonau, WGD Donau Oberösterreich Tourismus GmbH

FIGURES DATA FACTS

Navigational closures due to high water and ice 2009–2023



Sources: Supreme Navigation Authority within the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, viadonau.

AVAILABILITY OF WATERWAY

Short-term closures due to high water Availability at 98.9%

In the 15-year average from 2009 to 2023, the availability of the Austrian section of the Danube waterway was 98.3% or about 359 days per year. During this period, there were three ice closures with an average duration of about 14 days, and in eight years the waterway had to be closed due to high water with an average duration of around eight days in each case.

In 2023, several smaller high water waves were recorded on the Danube in April, May, August and especially December. Water levels above the Highest Navigable Water Level (HSW 2020) were observed at the Wildungsmauer gauge (reference gauge for the section east of Vienna) on two days in December, at the Kienstock gauge (reference gauge for the Wachau) on one day in August and five days in December. An official closure of navigation due to high water was ordered on the Austrian section of the Danube for a total of just over four days in 2023, but there were no closures due to ice. The waterway was therefore available on 361 days this year, or 98.9% of the year.

Weather-related official closures can be ordered by the navigation police on the Austrian section of the Danube waterway due to extreme situations such as ice formation or high water. While closures caused by significant ice formation are mainly limited to the winter months, usually to January and February, high water waves tend to occur in the spring and summer months.

Apart from high water and ice closures, official closures of the Danube waterway can also be ordered as a result of traffic accidents, lock failures, water pollution, construction work or events. In 2023, these closures to navigation lasted just under 20 hours. Total lock closures, i.e. the parallel closure of both lock chambers, took a total of ten and a half hours in 2023 and affected three of the ten lock facilities on the Austrian section of the Danube. Local closures of the waterway due to events accounted for a total of nine and a half hours in 2023.

- Availability of the Danube at 98.9% in 2023
- Short-term closures due to high water at the end of August and the end of December

LOAD FACTOR

Low water levels in June and July Highest water levels in December

- Average daily mean value of the Wildungsmauer gauge at 271 cm
- 5,883 transportations in total
- highest average load factor of 69.7% in March

2023 began with typical water levels, i.e. low water levels in the winter months followed by high water levels in spring. However, a period of low water levels in June and July was atypical.

September and October were again characterised by low water levels typical of autumn, with the lowest daily mean value of 121 cm being recorded at the Wildungsmauer gauge on 16 October. This was followed by exceptionally high water levels in November and December, with the annual maximum daily mean value of 648 cm recorded at the Wildungsmauer gauge on 24 December.

The average daily mean value of the Wildungsmauer gauge was 271 cm in 2023. This exceeded the previous year's value by 43 cm.

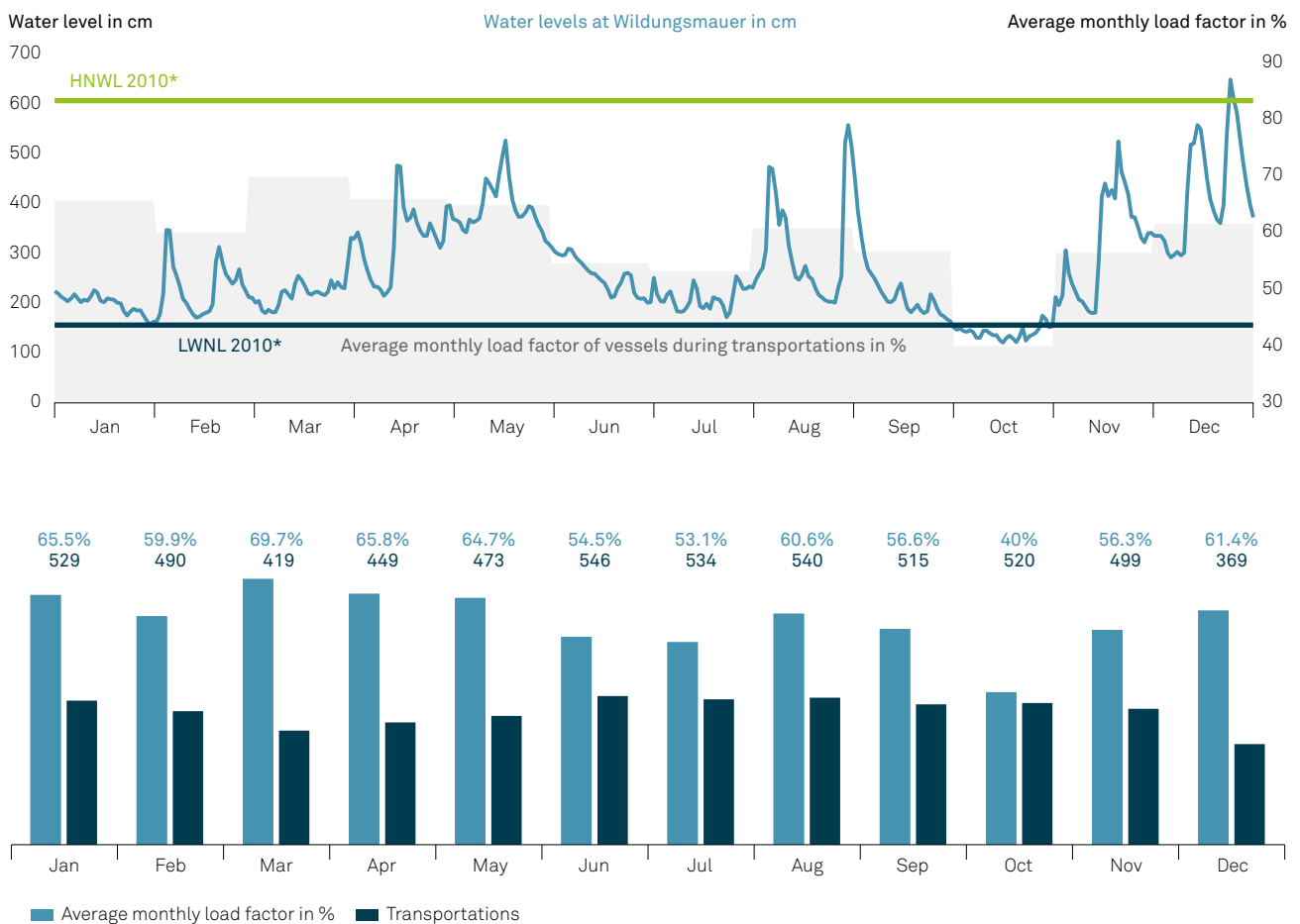
In 2023, 6 million tons of goods with a total of 5,883 transportations were carried on the Austrian Danube. The average load factor was 59%, one percentage point higher than in 2022.

The highest average load factor on a monthly basis was achieved in March at 69.7%. However, average load factors of more than 60% were also achieved in January, April, May, August and December.

The atypically low water levels in June and July led to a low average load factor of 54.5% and 53.1%. However, the lowest average load factor for 2023 was reached in October at just 40%.

FIGURES DATA FACTS

Water levels and resulting load factors of cargo vessels in 2023 using the Wildungsmauer gauge of reference

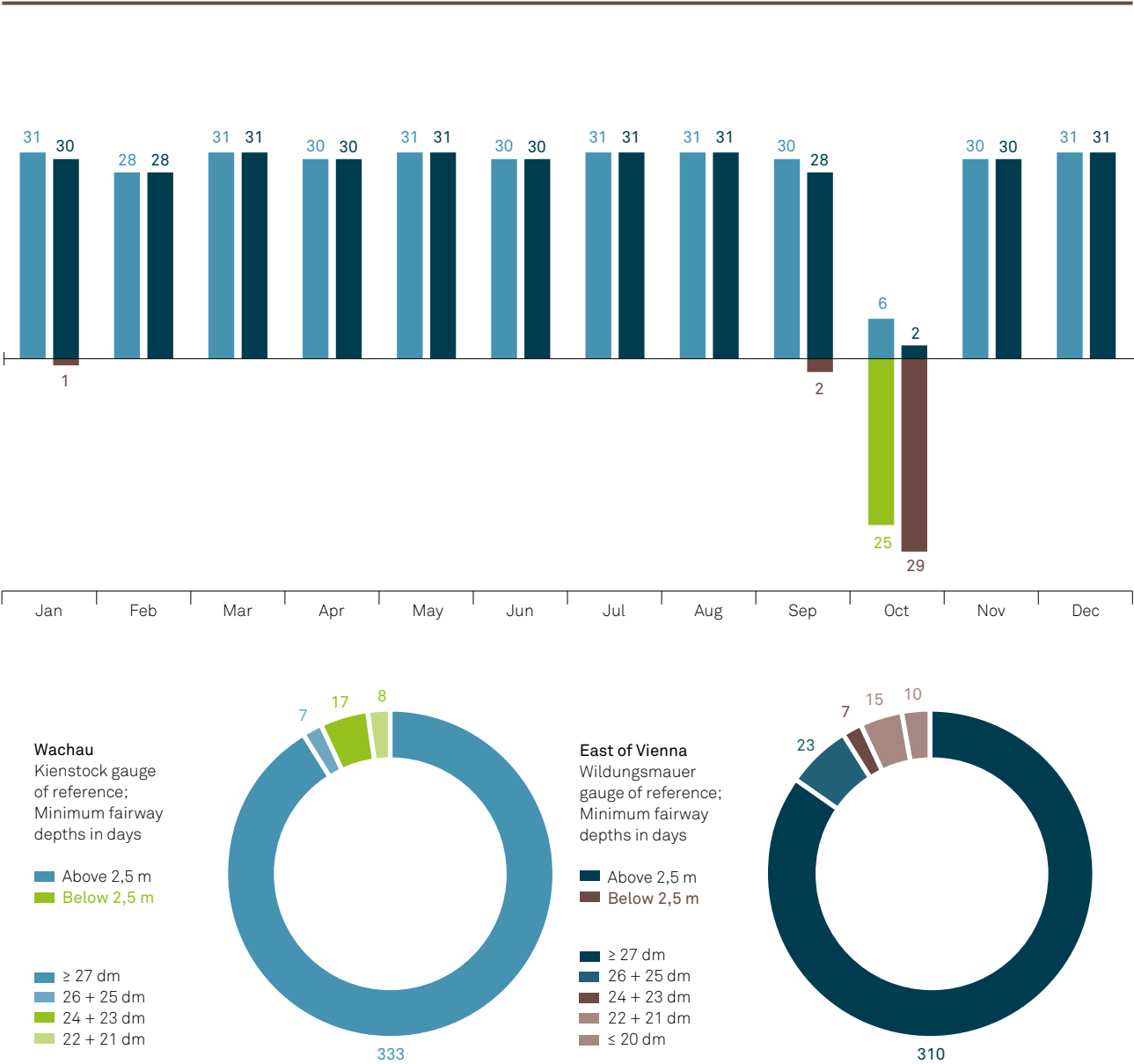


* LWNL 2020 (low navigable water level): This water level exceeded on 94.0% of days in a year during ice-free periods with reference to a 30-year observation period (1991–2020). The current LWNL value for the water gauge Wildungsmauer is 155 cm.
 HNWL 2020 (highest navigable water level): This value represents the water level corresponding to the discharge exceeded on 1.0% of days in a year with reference to a 30-year observation period (1991–2020). At Wildungsmauer, the highest navigable water level is currently 605 cm.

Source: Statistics Austria, adapted by viadonau

FIGURES DATA FACTS

Minimum continuously* available fairway depths in days on the free-flowing stretches of the Danube 2023



* Based on the fairway width required for a four-unit pushed convoy travelling downstream without encountering other vessels. Fairway width depends on the river bend radii involved.
Source: viadonau

FAIRWAY DEPTHS

11 months availability of 2.5 m fairway depth

With the exception of the entire month of October, which was characterised by low water, the Danube had very good water levels in 2023. The daily average water level at the Wildungsmauer gauge (reference gauge for the section of the Danube between Vienna and Bratislava) was above mean water on 130 days in 2023 (MW 2020), compared to only 45 days in 2022. In addition to several periods throughout the year with water levels above 500 cm, there was also a “Christmas high water” in 2023, with two days above the highest shipping water level (HSW 2020), which led to a short-term closure of the stretch by the authorities. Conversely, water levels below regulatory low water (RNW 2020) were observed on 29 days or 7.9% of the days in 2023, all in the month of October.

With the exception of the month of October and two days in September, fairway depths of more than 2.5 m were recorded in the deep channel in the two free-flowing stretches of the Austrian Danube throughout the entire year in 2023. Overall, a minimum fairway depth of 2.5 m was present in the deep channel in the Wachau on 340 days or 93.2% of the year (–6.3% compared to 2022). In the free-flowing section east of Vienna, a minimum fairway depth of 2.5 m was guaranteed on 333 days or 91.2% of the year (–2.8%). In the relevant shallow sections of the Wachau and east of Vienna stretches, fairway depths of less than 2.3 m were guaranteed on 25 days throughout 2023. Conversely, fairway depths of at least 2.7 m were available to shipping on 310 days.

The minimum available fairway depths for the two free-flowing sections of the Austrian Danube (Wachau and east of Vienna) were determined from all hydrographic surveys of the riverbed published by viadonau in 2023. The values were analysed in combination with water level hydrographs relevant to navigation (averaged daily water levels at the two gauging stations Kienstock and Wildungsmauer). The reference was a deep channel within the navigation channel that was as continuous as possible, representing the required fairway width for a four-unit pushed convoy downstream without encountering traffic.

- 333 days or around 91.2% availability of 2.5 m fairway depth in the deep channel east of Vienna
- 340 days or around 93.2% availability of 2.5 m in the Wachau

TRANSPORT DENSITY

Eastbound traffic dominates Lower transport volumes in the west

- 3.1 million tons handled in Linz
- 3.7 million tons upstream

The largest volume of goods on the Austrian Danube is accounted for by transport from and to the eastern Danube countries. In 2023, 4.5 million tons were transported across the Slovakian-Austrian border, more than twice as much as across the Austrian-German border, where 2.1 million tons were carried.

Dividing the course of the Austrian Danube into nine sections, it becomes clear that the transport volumes within these sections tend to decrease from east to west. While more than 4 million tons were transported in each of the three eastern sections between the Slovakian-Austrian border and Pischelsdorf in 2023, the four sections between Pischelsdorf and Linz still handled well over 3 million tons each and the two sections between Linz and the Austrian-German border just over 2 million tons.

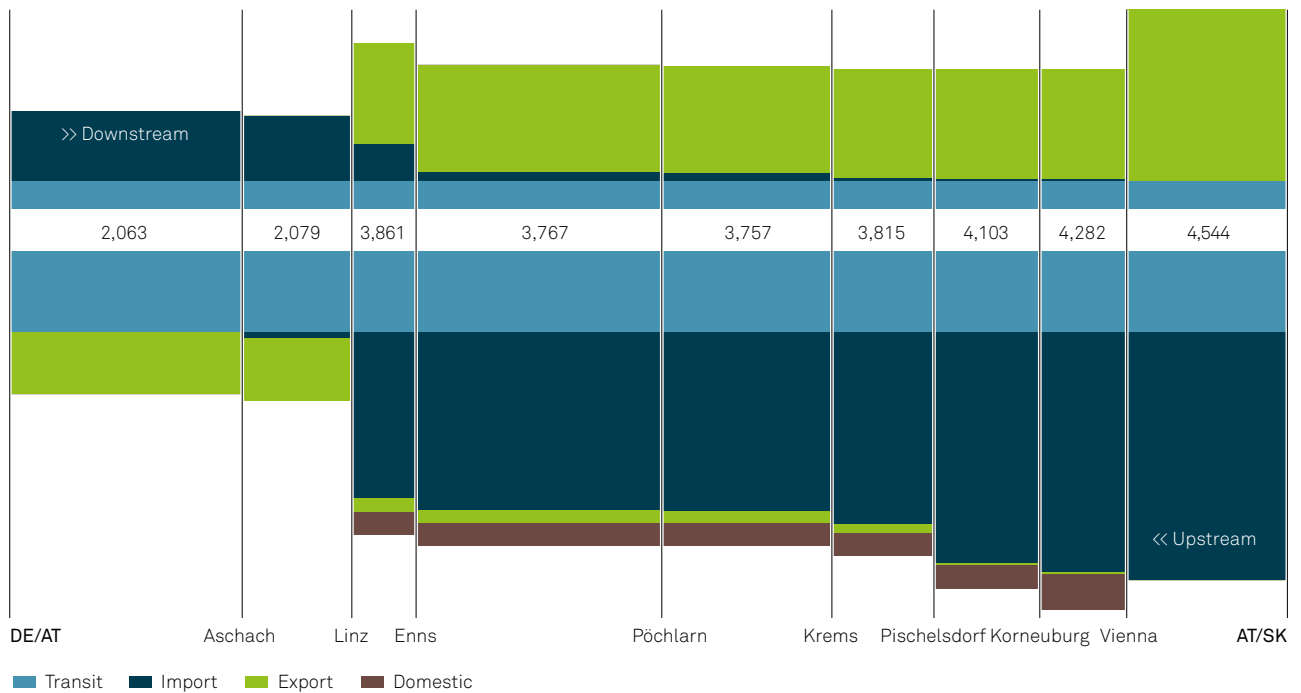
The two largest jumps in the traffic volume were at Linz and Vienna, whose ports and transshipment sites processed a total of 3.1 million and 1 million tons respectively in 2023. In Linz, 2.5 million tons were handled at the voestalpine AG plant port alone.

The transport density also shows that, at 3.7 million tons, upstream traffic, i.e. from the east to the west, was significantly higher than downstream traffic (from the west to the east) at 2.3 million tons. With regard to imports, the most important transport sector at 2.7 million tons, it can be seen that 77.8% of the total import volume was shipped to Austria from the countries bordering the eastern Danube. On average, 17,252 tons per kilometre and 16,567 tons per day were shipped on the 351 km section of the Austrian Danube in 2023. Compared to the previous year, this represents a slight decrease of 5.1%.

* Excluding transports within a port location.

FIGURES DATA FACTS

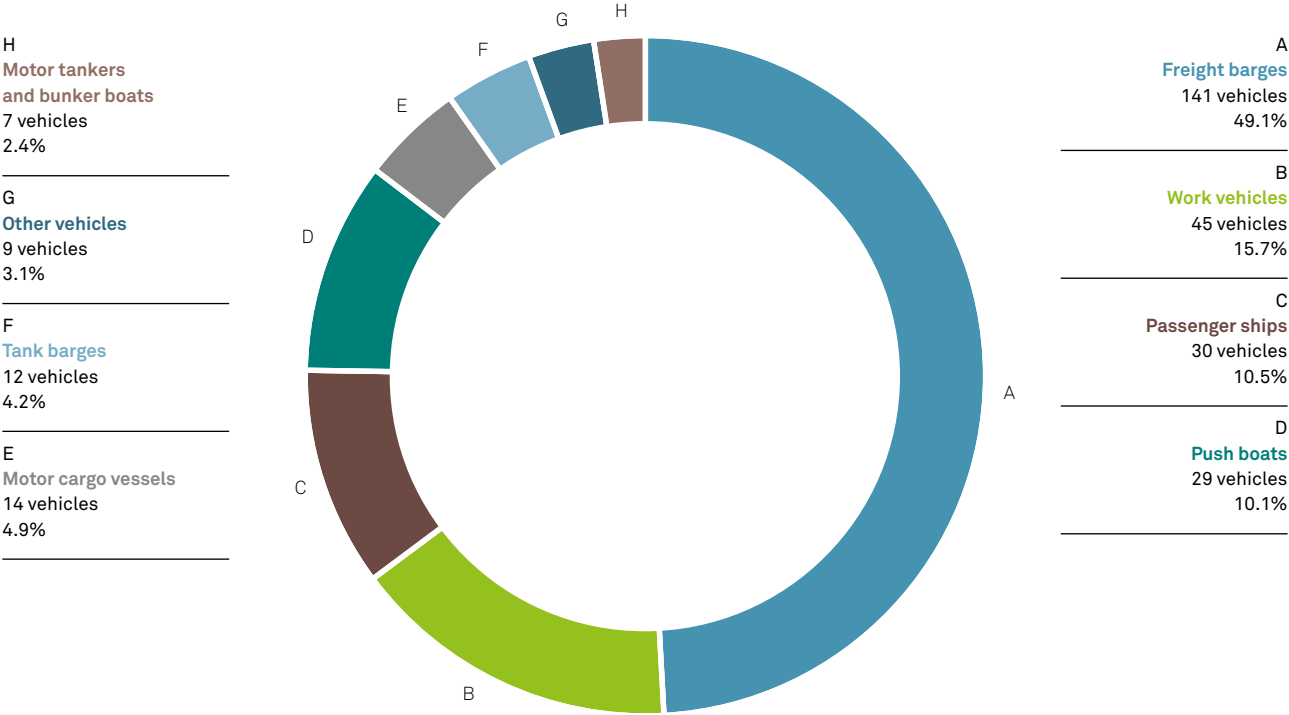
Density of freight traffic on the Austrian Danube 2023



Section	Length	Import	Import	Export	Export	Domestic	Domestic	Transit	Transit	Total	Total	In sum
in 1,000 tons	in km	upstr.	d'str.	upstr.	d'str.	upstr.	d'str.	upstr.	d'str.	upstr.	d'str.	
Border DE/AT–Aschach	63.21	0	598	541	0	0	0	691	233	1,232	831	2,063
Aschach–Linz	31.30	54	560	541	0	0	0	691	233	1,286	793	2,079
Linz–Enns	16.87	1,435	318	117	868	199	0	691	233	2,442	1,419	3,861
Enns–Pöchlarn	67.63	1,540	76	104	924	199	0	691	233	2,534	1,233	3,767
Pöchlarn–Krems	46.20	1,543	61	104	924	201	0	691	233	2,539	1,218	3,757
Krems–Pischelsdorf	26.30	1,656	23	73	938	201	0	691	233	2,621	1,194	3,815
Pischelsdorf–Korneuburg	29.60	1,990	16	16	947	210	0	691	233	2,907	1,196	4,103
Korneuburg–Vienna	23.64	2,071	16	16	947	308	0	691	233	3,086	1,196	4,282
Vienna–Border AT/SK	45.76	2,144	0	0	1,476	0	0	691	233	2,835	1,709	4,544

FIGURES DATA FACTS

Overview of the Austrian Danube fleet* according to vehicle type 2023



* The Austrian Danube fleet encompasses vehicles of category 1 according to Section 3 of the Vessel Technology Regulation (Schiffstechnikverordnung), which are defined as follows: a vehicle whose length (L) is 20 m or more or whose product of length (L), breadth (B) and draught (D) is 100 m³ or more, or which is intended to carry more than 12 passengers (passenger vessels), a floating device or a tug or push boat intended to tow, push or carry such vessels coupled to it.

Sources: Register of inland vessels, Vienna; Supreme Navigation Authority within the Federal Ministry for Climate Action; viadonau

AUSTRIAN DANUBE FLEET

Size of the Danube fleet constant

Freight barges remain the largest group

In 2023, the Austrian Danube fleet comprised 287 vehicles (down 2 compared to the previous year) with an average age of 45 years. The Danube fleet includes licensed category 1 vehicles according to Section 3 of the Ship Technology Ordinance, which are registered in Austria. The vehicles are categorised according to the vehicle types defined in UNECE Recommendation 28.

Just under half of the vehicles can be assigned to the category of non-motorized freight barges and lighters (141 vehicles or 49.1%). They are on average 42 years old, 68.8 m long, 10.1 m wide, have a draught of 2.5 m and a deadweight tonnage of 1,444.0 tons.

The second largest category in 2023, with 45 units or 15.7%, were work vehicles, such as construction site vehicles and floating equipment, with an average age of 46 years.

In third place were passenger ships with 30 vehicles or 10.5% of the Austrian Danube fleet. These are mainly day-trip vessels. Only one cruise vessel with 164 passenger beds is registered in Austria. The passenger vessels are on average 49 years old with an average transport capacity of 264 passengers.

A total of 29 push boats were registered in Austria in 2023 (10.1% of all vehicles). They are on average 47 years old, 31.0 m long, 9.0 m wide, have a draught of 1.7 m and an engine power of 1,405 kW.

The Austrian Danube fleet also included 14 motor cargo vessels (4.9%). They are 44 years old on average, 92.1 m long, 10.9 m wide, have a draught of 2.5 m, a deadweight tonnage of 1,706.6 tons and an engine power of 1,063 kW.

Of the tank barges and lighters, 12 units were registered in Austria (4.2%). They are on average 35 years old, 78.2 m long, 10.5 m wide, have a draught of 2.8 m and a carrying capacity of 1,649.2 tons.

A further nine vehicles (3.1%) are categorised as "Other vehicles". These include, for example, pleasure craft over 20 m and ferries.

Finally, seven motor tankers or bunker boats were registered in Austria. They are on average 63 years old, have a loading capacity of 414.7 tons and an engine power of 341 kW.

- In 2023, the Austrian Danube fleet comprised 287 vehicles with an average age of 45 years
- Freight barges are the most common vehicle group at 49.1%
- Work vehicles are in second place at 15.7%, followed by passenger and day-trip vessels in third place at 10.5%

LOCKED-THROUGH VESSEL UNITS

73,000 units locked through

Further decline in freight transport

- Decrease of 9.4% in locked-through freight vessels compared to last year
- 0.5% increase in passenger transport compared to the previous year

In 2023, a total of 72,964 passenger and freight vessels passed through the nine Austrian lock facilities (excluding the Jochenstein power plant on the Austrian-German border). These included 20,080 motor cargo vessels and motor tankers (–5.9% compared to 2022), 11,921 push boats (–14.7%) and 40,963 passenger ships (+0.5%). The vessel units travelling in convoy included 24,138 cargo and tank lighters or barges (–18.5%).

For all types of vessels and convoys in freight and passenger transport, this represents a decrease of 4.1% in the number of vessel units handled compared to 2022.

Following a recovery in overall traffic volumes in 2022 due to the Covid-19 pandemic, a further decline in traffic volumes was recorded in 2023, which is reflected in the lock numbers. In freight transport, the number of vessel units passing through the locks on the Austrian Danube decreased (by 9.4% or 3,301 units less than in 2022).

In passenger transport, there was a slight increase in volume compared to the previous year (by 0.5% or 207 shipping units more than 2022). In 2023, freight transport accounted for 43.8% of the total shipping volume (–2.6% compared to 2022), while passenger transport accounted for 56.2% (+2.6%).

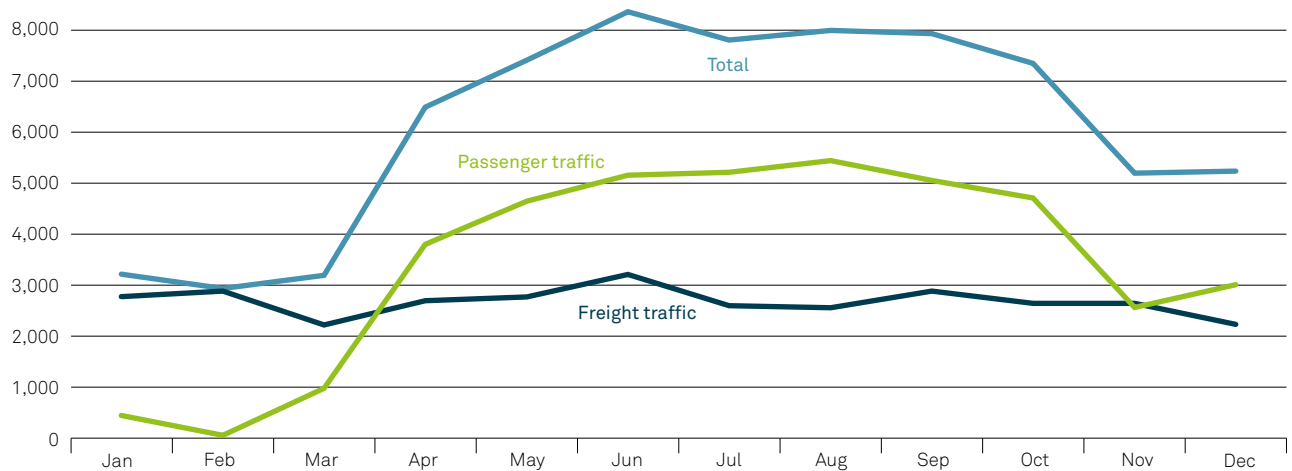
For 2023 as a whole, the average number of vessels at an Austrian Danube lock was 8,107 convoys or individual vessels (a decrease of 344 vessel units compared to 2022) – this was 676 (–28) vessel movements per month and 22 units moved per day and lock. As in previous years, the Freudenu lock (Vienna) recorded the highest volume of vessel movements with 9,739 vessel units (–6.7% compared to 2022), followed by the Greifenstein lock with 8,787 units. The Aschach lock handled the lowest number of vessels with 6,918 units.

In addition to the commercial shipping units used for freight and passenger vessel units at the Austrian Danube locks, 9,198 small sports and leisure crafts (+1.8% compared to 2022) as well as 1,764 other vessel units – such as public authority and rescue crafts – were also locked in 2023.

FIGURES DATA FACTS

Vessel units* in freight and passenger transport locked through Austrian Danube locks in 2023

vessel units



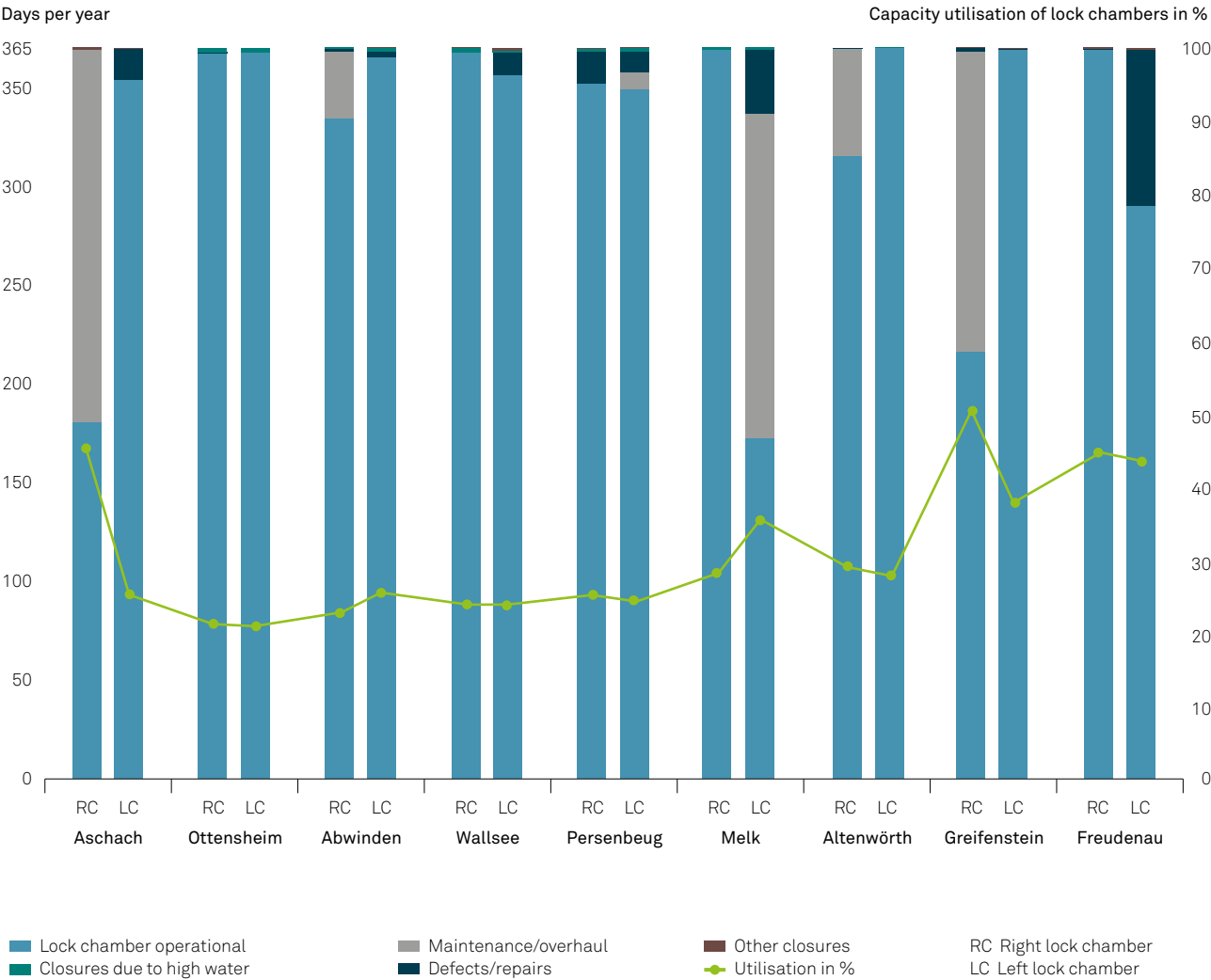
	Freight traffic	% to previous year	Passenger traffic	% to previous year	Total	% to previous year
2023	32,001	-9.4	40,963	+0.5	72,964	-4.1
2022	35,302	-14.8	40,756	+162.5	76,058	+33.5
2021	41,432	-7.1	15,524	+107.0	56,956	+9.4
2020	44,575	-2.9	7,501	-85.7	52,076	-47.0
2019	45,915	+7.8	52,319	+11.0	98,234	+9.5

* Vessel units in freight transport include convoys (pushers, motor cargo vessels and motor tankers with cargo and tank lighters or barges) and individual vessels (motor cargo vessels and motor tankers or individual pushers and tugs). The passenger vessels are day-trip vessels and cabin vessels.

Source: viadonau

FIGURES DATA FACTS

Availability of Austrian Danube locks 2023



Source: viadonau

AVAILABILITY OF LOCK CHAMBERS

99.27% continuous availability

Mean chamber utilisation around 31%

As the nine Austrian Danube locks are large-scale technical installations, they need to be serviced and maintained at regular intervals to ensure operational functionality and safety, and thus the capacity of waterway traffic flow. In 2023, these lock overhauls and necessary large-scale repairs accounted for around 83% of all closure days of the 18 lock chambers. The average duration of overhauls carried out in the winter half year 2022/23, which were completed by spring 2023, was 239 days per chamber.

Other reasons for lock closures included repairs caused by technical defects during the year. These accounted for around 14.6% of all closure days. In addition, around 0.6% of closure days were caused by scheduled modification and maintenance work, dredging in and around lock facilities, surveying, water pollution and accidents. There were also two short closures due to high water in 2023 – one at the end of August and another closure of the majority of the locks around Christmas time. These accounted for a total of around 1.8% of the closure days. In 2023, no weather-related closures due to ice were recorded.

The 18 lock chambers on the Austrian Danube were continuously available for 362 days (99.27%) in 2023. In April to October, the busiest months for passenger, sports and leisure navigation, only three locks were completely closed due to a high water event at the end of August. This high water lasted more than a day and took an average of around 14 hours per day.

In the low-traffic months of November to March, all nine locks were completely out of operation for short periods. The main reason for the total closures was a short-term high water at Christmas. The high water lasted almost a whole day, with several lock facilities being closed. In addition, urgent repairs were required in four cases while the second chamber was undergoing maintenance. On average, the locks were closed for around five hours per day during the winter months.

Capacity utilisation of the individual lock chambers averaged at around 31% in 2023. The distribution of utilisation varies considerably from a geographical perspective. As in previous years, the Freudenu lock reported the highest average utilisation at around 44%, followed closely by the Greifenstein lock. The Ottensheim lock recorded the lowest capacity utilisation at around 21%. In this regard, the degree of lock chamber utilisation corresponds to its “occupancy time”, i.e. the entire period from the entry of the first to the exit of the last jointly locked-through vessel, assuming 24/7 availability of the lock chambers and taking lock closures into account.

- 99.27% continuous availability of the Austrian locks in 2023
- Lock overhauls are carried out during the low-traffic period from November to March to avoid waiting times

WAITING TIMES AT LOCKS

Waiting times for only 5.1% of vessels Average waiting time 34 minutes

- No waiting times at locks for 94.9% of all vessel units in 2023
- 34 minutes average waiting time for 5.1% of vessels

In 2023, only 5.1% of all vessel units (commercial freight and passenger vessels) on the Austrian section of the Danube had to wait at the nine lock facilities. The mean waiting time for these 5.1% was 34 minutes over the entire year.

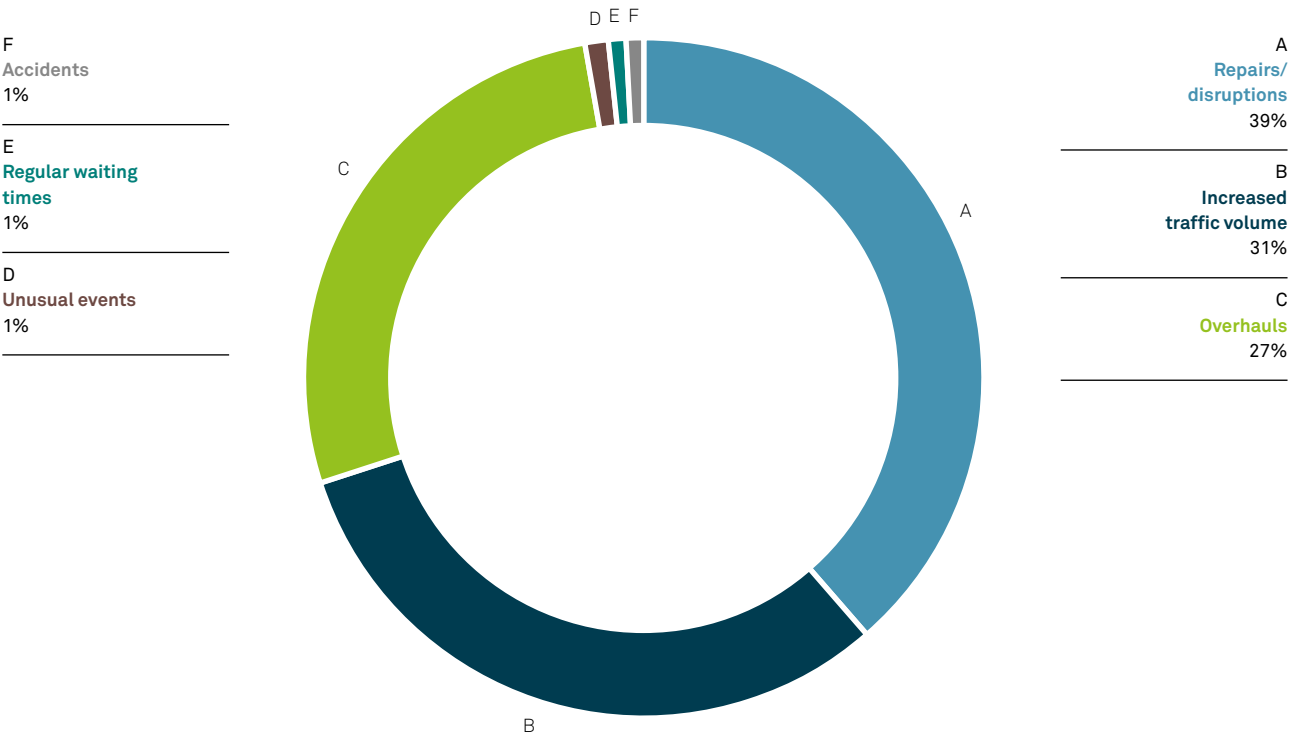
Lock availability and traffic volumes are the principal factors that influence waiting times. Around 67% of the waiting times can be attributed to the unavailability of lock chambers due to overhauls, repairs/disruptions or necessary repairs after accidents. The remaining 33% is largely due to traffic-related causes, unusual events and regular operations. Adjusted for the impact of lock overhauls, unplanned repairs and increased traffic, only 1% of the vessels had to accept an average waiting time of around 20 minutes.

The following picture can be drawn from the detailed analysis of the evaluation. 27% of the waiting times were caused by the overhauls of the lock chambers in Aschach, Melk and Greifenstein as well as the revisions of the chambers in Altenwörth, Persenbeug and Abwinden, which started in autumn.

More than a third (39%) of the waiting times resulted from repairs/disruptions and closures during the year due to dredging or surveying. An insignificant share of 1% was mainly due to two accidents in the lock area and the resulting repair measures at the lock facility in Melk. A further third of the waiting times (31%) were due to increased traffic volumes. This includes situations in which more vessels are waiting in front of a lock than can be accommodated in one chamber. Several rescue operations and a statistical survey on transit volumes had an impact on navigation, accounting for 1% of the waiting times, and only a further 1% of the waiting times were within the direct operational control of the lock supervisory staff.

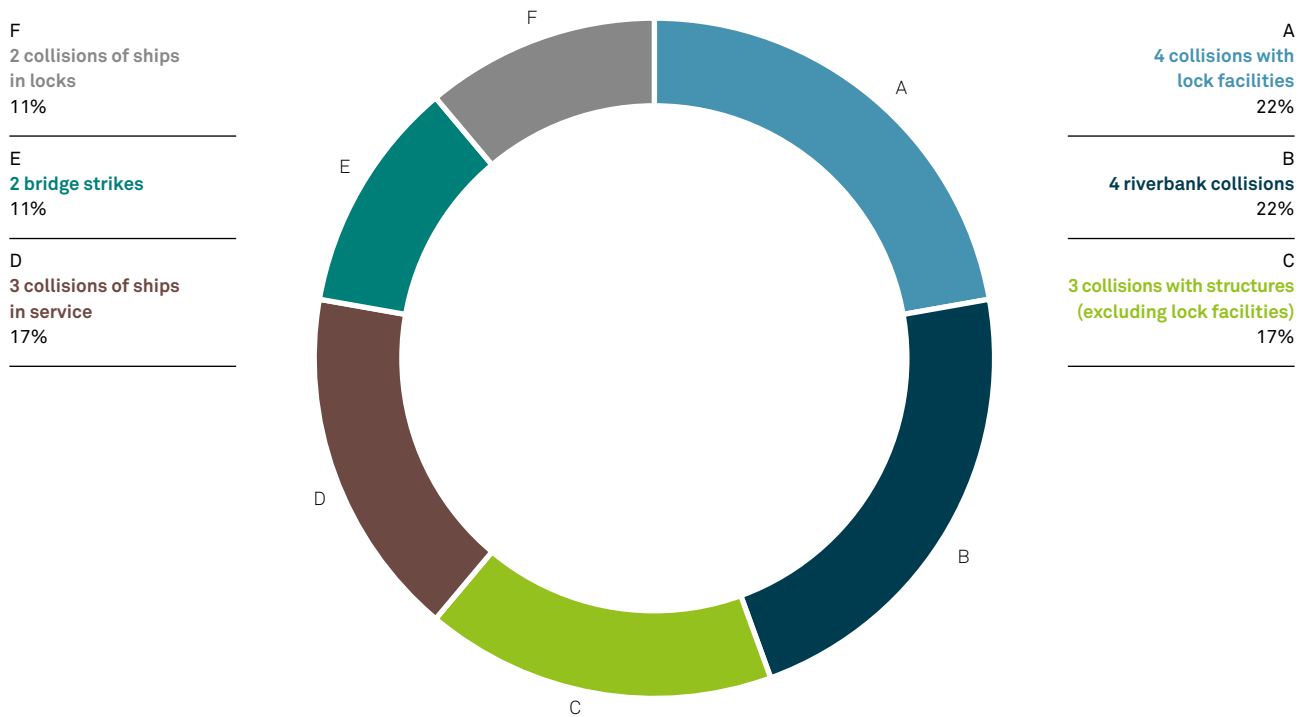
FIGURES DATA FACTS

Causes of waiting times at Austrian Danube locks 2023



FIGURES DATA FACTS

Traffic accidents according to type of damage on the Austrian Danube 2023



ACCIDENTS

Number of traffic accidents remains low No personal injuries in 2023

In regard to accident statistics, Danube navigation is an unbeatably safe transport mode, compared to land transportation by road or rail. A total of 17 accidents involving commercial passenger ships, freight vessels or convoys resulting in damage to property and/or personal injury occurred during the course of 2023 on the Austrian section of the Danube. Eleven accidents with cargo vessels were recorded, while nine incidents resulted in damage to a passenger ship.

Broken down according to the type of accident, there were four collisions with lock facilities and four collisions with a riverbank. Collisions with other structures and collisions of ships in service occurred in three accidents each. In addition, there were two collisions with a bridge and two collisions of vessels in locks. In one accident, a bridge collision occurred first, followed by a collision with a riverbank.

In 2023, there were no accidents involving personal damage in freight and passenger traffic on the Austrian Danube section. There were no incidents of water pollution or leakage of cargo in 2023.

The majority of accidents in 2023 occurred on impounded sections. In total, eight accidents were recorded here, including four collisions with a riverbank, two collisions with ships in service, two bridge strikes and one with another facility. In one of these incidents, a bridge and subsequently the riverbank were hit.

Within the vicinity of lock facilities (whilst being locked-through or in either the headwater or tailwater area of the lock) six accidents were recorded in 2023, four of them involved collisions with the lock system itself and two involved collisions inside the lock.

Two more collisions with other facilities were registered on the free-flowing stretch of the Danube east of Vienna. On the free-flowing stretch of the Danube between Melk and Krems (Wachau) there was a collision between vessels in service.

Sports and recreational boating, which is not included in the accidents described above (except in the case of collisions with commercial freight and passenger vessels), recorded one accident involving damage on the Austrian section of the Danube in 2023. This involved a riverbank collision.

- Collisions with lock facilities and riverbank collisions were the most frequent types of accident in 2023
- No personal damage
- 11 accidents involved cargo vessels; 9 accidents involved passenger vessels

MODAL SPLIT

86.9 mil. tons* in the Danube corridor

Decrease of 5.1%

- Decrease in transport volumes for all modes of transport
- Danube accounts for the largest share of import traffic across the eastern border (19%)

Within the Austrian Danube corridor, a total of 86.9 million tons were transported by road, rail and waterway in 2023. This represents a decrease of 4.7 million tons or 5.1% compared to the previous year.

In absolute terms, this decrease affected all three modes of transport. However, road transport increased its percentage share of the modal split by two percentage points to 67%, while the contributions of rail and waterways to the modal split fell by one percentage point each to 27% and 6% respectively.

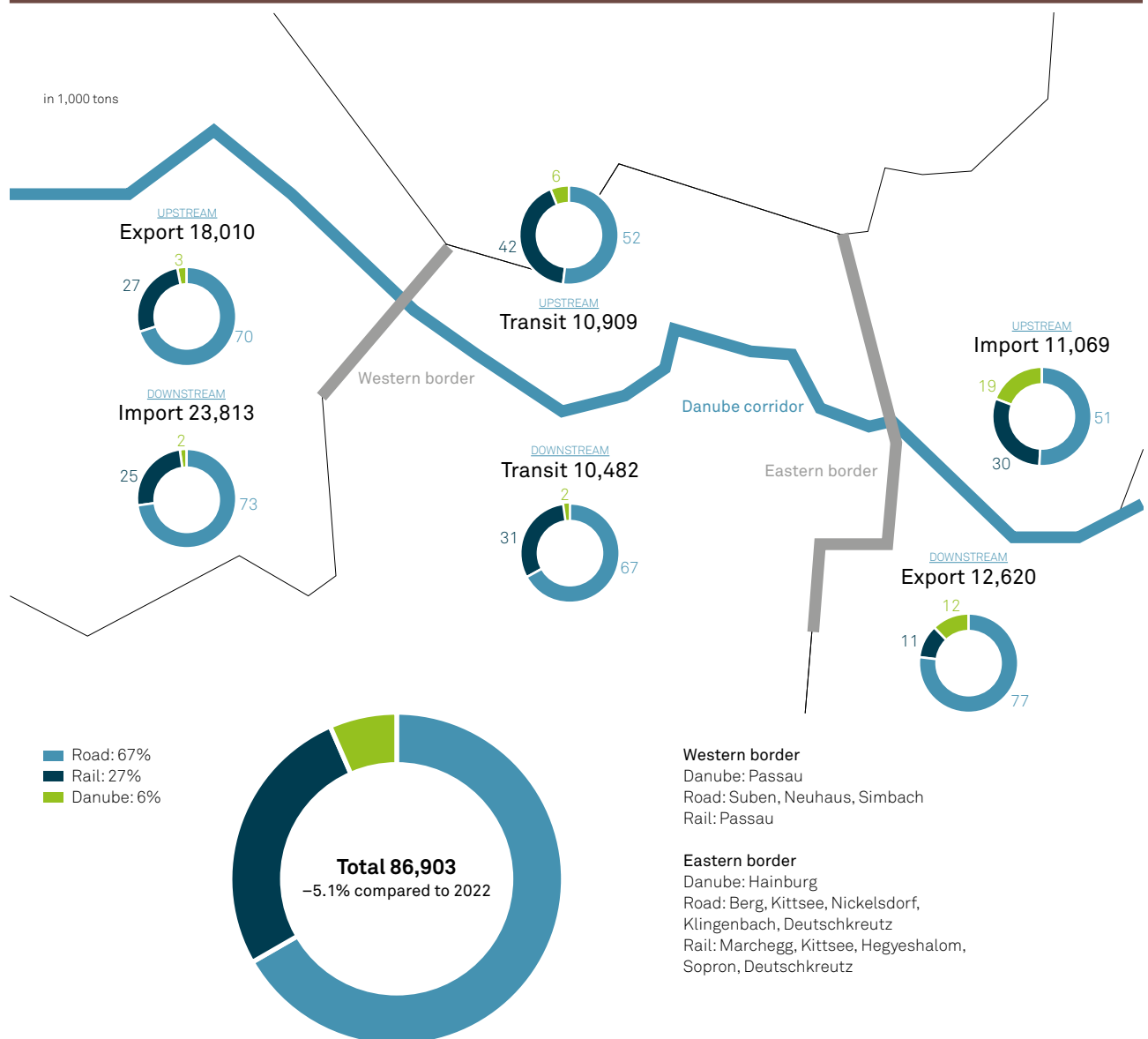
Looking at the partial volumes broken down by transport sector and direction, the Danube makes its largest contribution to the modal split with 19% of import traffic across the eastern border of the Danube corridor. However, the Danube also accounts for 12% of export traffic across the eastern border, a share that even exceeds that of rail transport by one percentage point. The Danube was the only one of the three modes of transport to record an increase in transport volumes.

The Danube has the smallest share (2% each) in import traffic across the western border of the Danube corridor and in transit traffic to the valley. In general, the volume transported across all modes of transport at the western border (63.2 million tons) is 40.1% higher than the volume transported across the eastern border (45.1 million tons).

In terms of transport volumes on the Danube, a comparison of traffic across the western and eastern borders paints a different picture: at 4.5 million tons, the total volume of goods shipped across the eastern border is 114% higher than the volume transported across the western border (2.1 million tons).

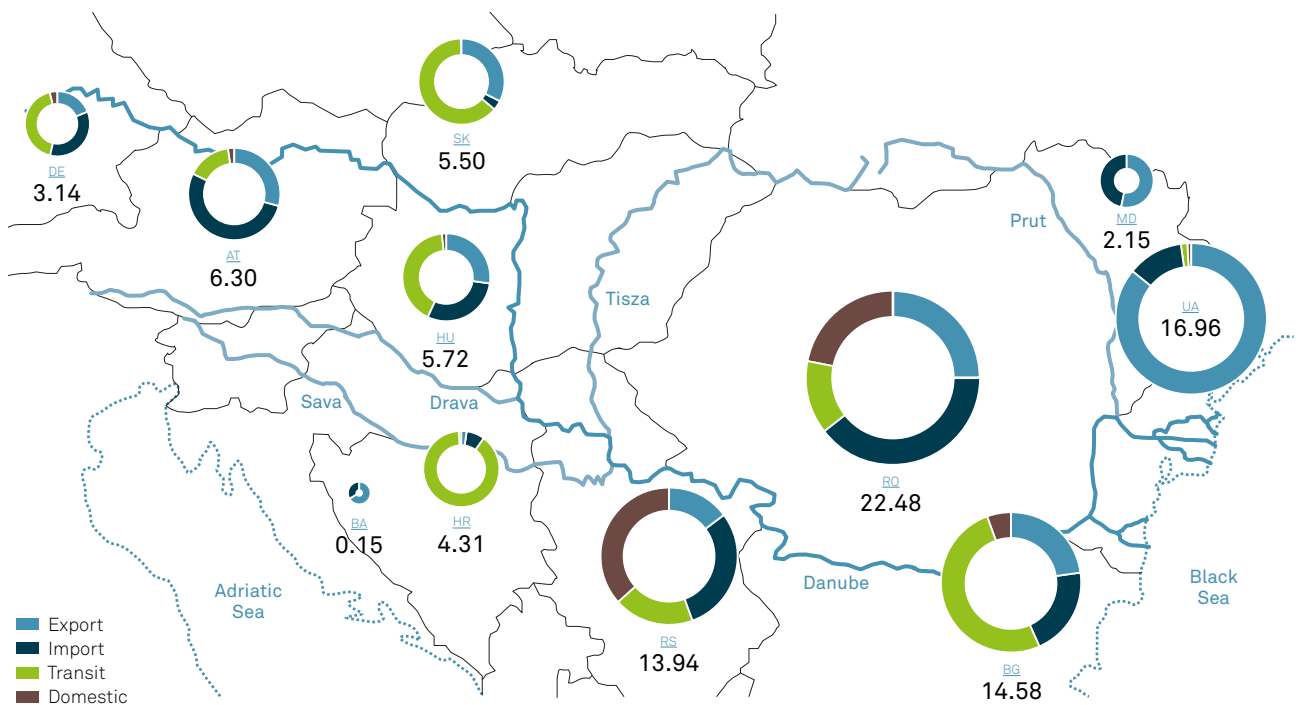
FIGURES DATA FACTS

Cross-border freight traffic in the Austrian Danube corridor 2023



FIGURES DATA FACTS

Freight transport on the entire Danube 2022



In millions of tons	DE	AT	SK	HU	HR	BA	RS	RO	BG	MD	UA
Export	0.60	1.84	1.80	1.57	0.10	0.10	2.09	5.64	3.35	1.15	14.59
Import	1.09	3.34	0.20	1.70	0.34	0.05	4.13	8.90	2.98	1.00	2.03
Transit	1.33	0.98	3.49	2.36	3.83	0.00	2.61	3.03	7.48	0.00	0.24
Domestic	0.12	0.14	0.01	0.09	0.04	0.00	5.11	4.91	0.77	0.00	0.10
Total	3.14	6.30	5.50	5.72	4.31	0.15	13.94	22.48	14.58	2.15	16.96

Sources: Eurostat, national traffic statistics, Statistics of the Jochenstein and Iron Gate I locks, Danube Commission; Donaukommission: "Market observation for Danube Navigation, results in 2022", adapted by viadonau

FREIGHT TRANSPORT ON THE ENTIRE DANUBE 2022

40.6 million tons in the Danube region Increase of 11.2% compared to 2021

In 2022, a total of 40.6 million tons of goods were shipped between the eleven countries in the Danube region (including Bosnia-Herzegovina). This corresponds to an increase of 11.2% compared to 2021.

This increase in connection with the war in Ukraine, which has been ongoing since 24 February 2022, is mainly due to the rise in export volumes to 14.6 million tons, which were exported via the Ukrainian Danube ports. 8 million tons of this was shipped to countries outside the Danube region.

The sharp increase in transport volumes via the Sulina Canal in Romania, the middle of the three estuaries of the Danube, from 5.1 million tons in 2021 to 10.6 million tons in 2022 should also be seen against the context of the war in Ukraine. This corresponds to an increase of 107.8%.

A total of 17.3 million tons were transported on the Danube-Black Sea Canal between the Romanian inland port of Cernavodă and the Romanian seaport of Constanța in 2022, which corresponds to only a slight increase of 0.1 million tons compared to 2021. However, only 0.8% of this volume was transported by seagoing vessel on the canal, which is in principle also navigable for seagoing vessels. If the import, export, transit and domestic transport sectors are added together at national level, it can be seen that Romania with 22.5 million tons, Ukraine with 17 million tons, Bulgaria with 14.6 million tons and Serbia with 13.9 million tons had by far the highest transport volumes.

This was followed by Austria with 6.3 million tons, Hungary with 5.7 million tons, Slovakia with 5.5 million tons, Croatia with 4.3 million tons, Germany with 3.1 million tons¹, Moldova with 2.2 million tons and finally Bosnia-Herzegovina, which is connected to the Danube via the Sava, with 0.2 million tons.

A total of 7 million tons of cargo passed through the Iron Gate I lock at Danube kilometre 943, which is jointly operated by Serbia and Romania, in 2022. Of this, 4.9 million tons were transported upstream and 2.1 million tons downstream.

- Exports from Ukraine increase to 14.6 million tons
- 17.3 million tons on the Danube-Black Sea Canal
- Highest transport volume in Romania

¹ local government districts of the Upper Palatinate and Lower Bavaria

FAIRWAY CONDITIONS ALONG THE ENTIRE DANUBE

Progress along the Lower Danube

Target achieved more often



„As an important element for greening the European transport system, it is now crucial to keep pace and utilise unique opportunities. Together with our European partners in the FAIRway Danube II project, which is co-funded by the EU and coordinated by viadonau, we are keeping up the pace of modernisation on the Danube and strengthening its role as an environmentally friendly transport option.“

ANDREAS BÄCK
Action Programs

From a hydrological perspective, the year 2023 can be described as average, with no particular deviations from the typical multi-year discharge throughout the year. Only late September and October 2023 were characterised by low water on all parts of the Danube.

Fairway conditions on the lower Danube in particular were significantly better than in previous years. Timely maintenance dredging and proactive traffic management (width restrictions) in Romania and Bulgaria minimised the number of days on which the maintenance target of 2.5 m fairway depth was not achieved. The most critical shallow sections for navigation in 2023 were on the Slovakian and – as in previous years – the Hungarian Danube, where 2.5 m of fairway depth was not available for more than 80 days in some sections. This was due to a lack of or inadequate maintenance measures, as the hydrological situation would have permitted greater fairway depths.

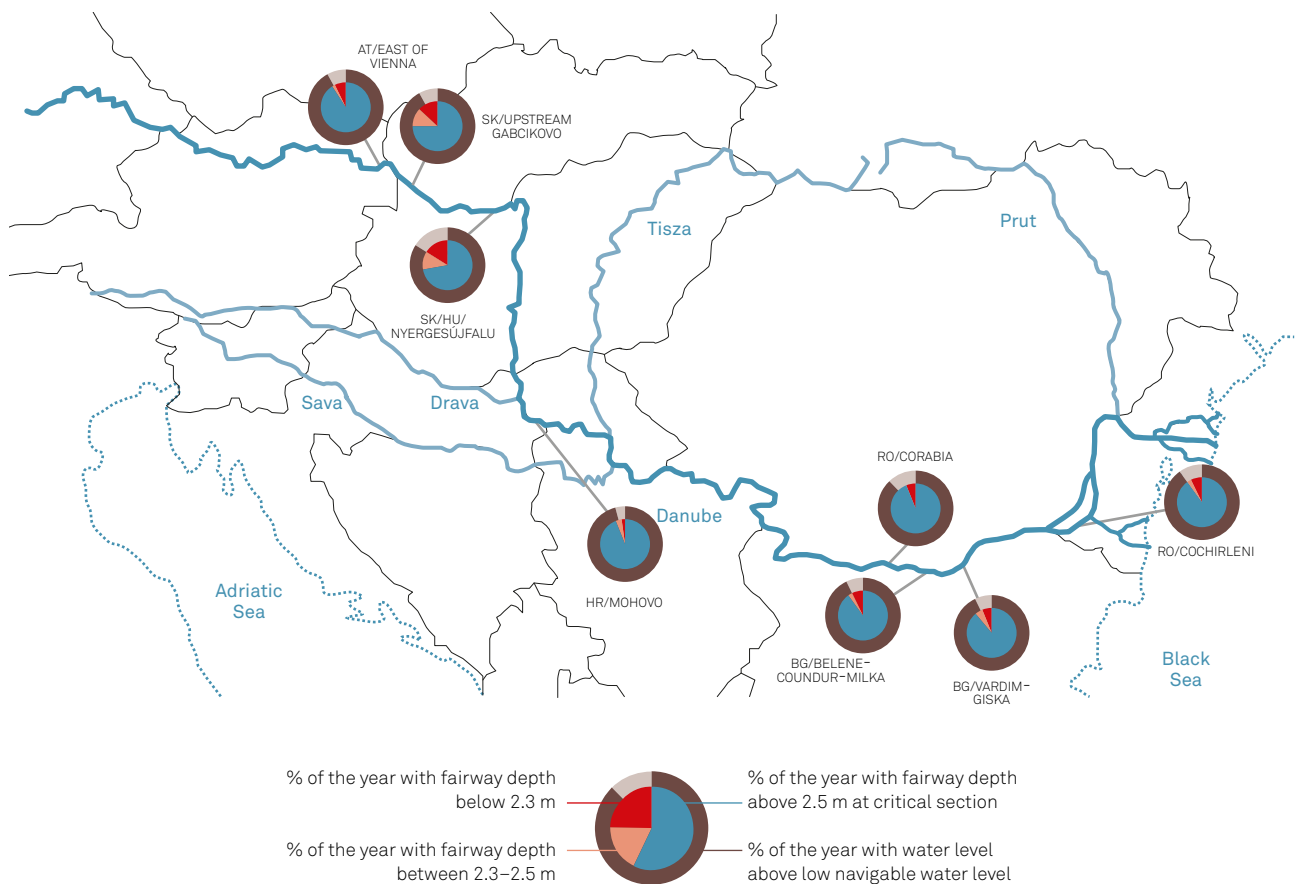
The chart provides a status overview of the most important critical locations on the Danube in 2023. For each critical location, the chart shows the situation regarding fairway availability (inner circle) in relation to the reference water levels (outer circle). The maintenance target is to provide fairway depths equal to or exceeding 2.5 m on at least as many days per year as the statistical low navigable water level (LNWL). This situation corresponds to the inner blue circle reaching the level of the outer dark brown circle. In 2023, this maintenance target was not achieved at several critical locations along the Danube.

It is also important to include depths of just under 2.5 m when interpreting the status of critical locations. These allow for slightly reduced level of navigability without reaching a depth of 2.5 m. On some sections of the fairway, depths of 2.4 m or 2.3 m (light-red colour in the inner circle) were available on some days.

Since the endorsement of the “Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries” in 2014, significant steps have been taken towards its implementation. Considerable investments have been made and many riparian states have acquired specialised equipment as part of EU co-funded projects. However, the targeted use of this equipment depends primarily on the annual maintenance budgets and human resources of the individual waterway administrations. These conditions are not met in all countries, and the consequences of inadequate fairway maintenance are felt by shipping even in years with favourable hydrological conditions, such as 2023.

FIGURES DATA FACTS

Fairway conditions at critical locations along the Danube 2023










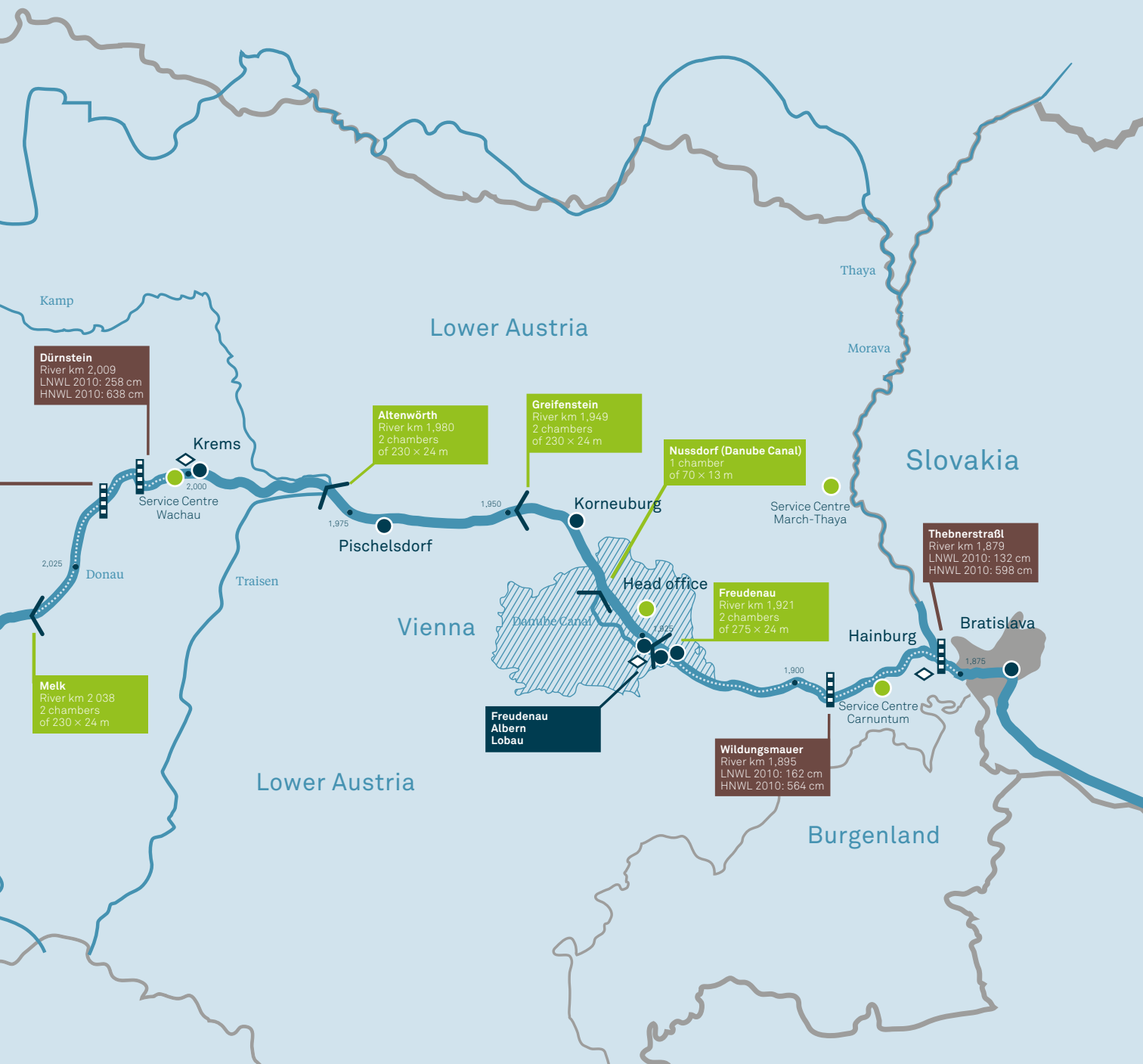
For a detailed interpretation of the chart, reference is made to the "Fairway Rehabilitation and Maintenance Master Plan for the Danube and its Navigable Tributaries" and the "Reports on Good Navigation Status – Status 2023". The individual framework conditions at critical sections need to be taken into account. The severity of the critical sections, along with reasons for failing to meet the maintenance targets, vary and may change over the course of time. No further data was available from Germany and Hungary at the time the chart was created.

Source: "Fairway Rehabilitation and Maintenance Master Plan for the Danube and its Navigable Tributaries" and the "Reports on Good Navigation Status – Status 2023", which were prepared as part of the framework of the EU Danube Region Strategy (<https://navigation.danube-region.eu/>) and the FAIRway Danube II project, respectively. Chart adapted by viadonau.



The Austrian section of the Danube

- | | |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  Waterway |  Navigation surveillance |
|  Free-flowing stretch |  viadonau Service Centre |
|  Lock | LNWL Low navigable water level |
|  Important water gauge | HNWL Highest navigable water level |
|  Port/transshipment site | |



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