

KEY DATA ON DANUBE NAVIGATION 2009

Changes from 2008 are given as percentages in brackets

TRANSPORT VOLUME

9.3 million tons (-16.8%)	Import: 4.9 million tons (-13.7%)
	Export: 1.6 million tons (-27.0%)
	Transit: 2.5 million tons (-12.2%)
	Domestic: 0.3 million tons (-34.4%)

TRANSPORT PERFORMANCE

9.6 billion tkm (-18.5%)	Within Austria: 2.0 billion tkm (-15.1%)
9,669 loaded journeys (-17.6%)	Outside Austria: 7.6 billion tkm (-19.3%)

WATER TRANSHIPMENT AT AUSTRIAN PORTS AND TRANSHIPMENT SITES

7.2 million tons (-19.3%)	Ores and metal waste: 2.7 million tons (-15.9%)
	Petroleum products: 2.0 million tons (-16.3%)
	Fertilisers: 0.6 million tons (-22.5%)
	Metal products: 0.5 million tons (-48.8%)
	Foodstuffs and animal fodder: 0.4 million tons (-7.5%)
	Other goods: 1.0 million tons (-2.7%)

VESSEL UNITS LOCKED THROUGH AT AUSTRIAN DANUBE LOCKS

95,948 vessel units* (-3.5%)	Cargo transport: 64,220 units (-6.1%)
* Convoys and individual vessels	Passenger transport: 31,728 units (+2.2%)

PASSENGER TRANSPORT (ESTIMATION)

1.0 million passengers	Liner services: 675,000 passengers
	River cruises: 225,000 passengers
	Non-scheduled services: 125,000 passengers

ACCIDENTS

18 traffic accidents with damage	Personal injuries: 0 dead, 0 injured
	Damage to property: 8 vessel-vessel, 5 grounding incidents, 5 incidents with damage to bank and facilities

AVAILABILITY OF THE WATERWAY

347 days	Closure due to high water: 6 days
15-year average: 360 days	Closure due to ice: 12 days

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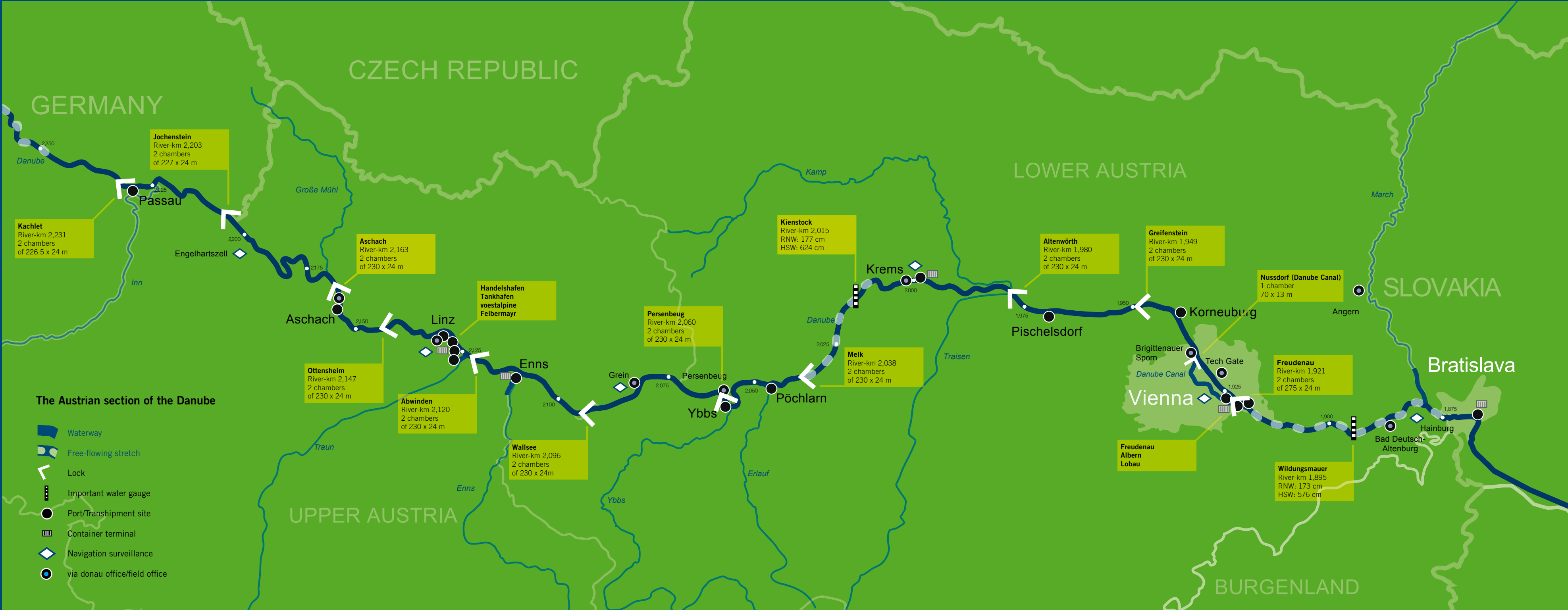
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MODERN WATERWAY & PRECIOUS ECOSYSTEM

via donau – Österreichische Wasserstraßen-Gesellschaft mbH considers it an important task to provide interested members of the public and decision makers from politics and commerce with up-to-date information about the Danube waterway. In doing so, the diverse attributes of the Danube waterway are showcased and knowledge is conveyed regarding both Danube navigation and the Danube ecosystem.

Therefore, and in addition to the data on Danube navigation, the current annual report provides an overview of important measures and developments regarding the environment. This also reflects via donau's integrative and holistic approach: to pursue the development of navigation and preservation of the valuable Danube ecosystem with equal vigour.



**HANS-PETER
HASENBICHLER**

Managing director
of via donau

via donau
Geschäftsführer
Hans-Peter Hasenbichler

SUSTAINABLE TRANSPORT POLICY COMPETITIVE TRAFFIC ARTERY

This well-established annual report is now appearing for the third year. Once again, it provides the interested reader with facts, figures and initiatives regarding Danube navigation. The presented data clearly attests to the high availability and the great potential of the Danube waterway. As the Minister in charge, I am pleased to have the National Action Plan (NAP) as a comprehensive instrument for the implementation of Austria's inland waterway transport policy.

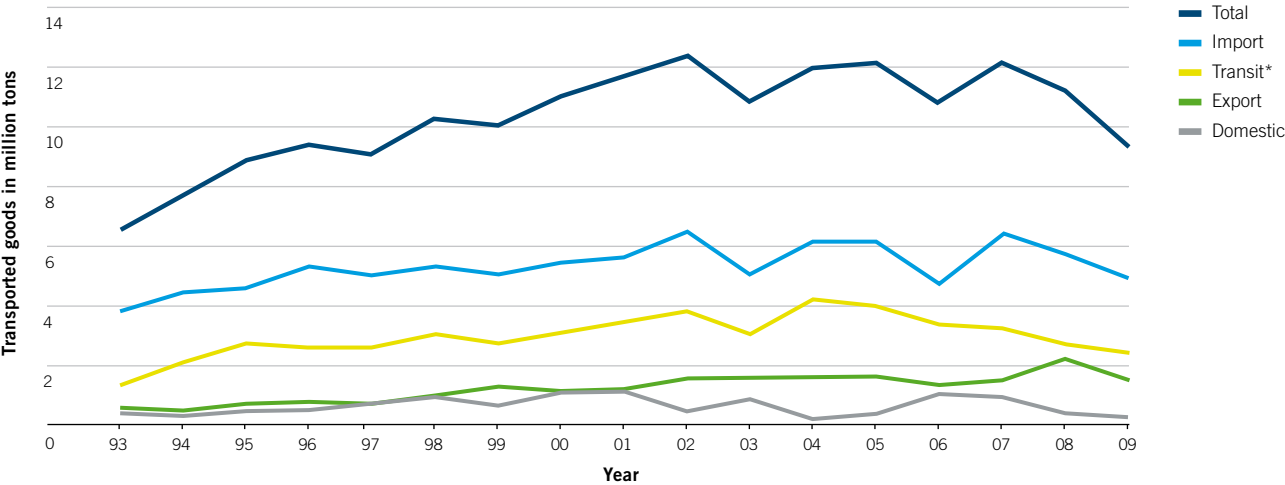
My Ministry and via donau are committed to the sustainability and efficiency of the Danube as a transport route. Numerous enterprises along the Danube use and appreciate this eco-friendly and cost-effective way to transport goods. This report is aimed at illustrating the high economic relevance of inland waterway transport as an environmentally sound mode of transport for Austria's economy.



DORIS BURES

Federal Minister for
Transport, Innovation
and Technology

Mag. Doris Bures
Ministerin für
Transport, Innovation
und Technologie



TRANSPORT VOLUME (TONS)	Import	Export	Transit ^{*)}	Domestic	Total
2009	4,945,292	1,581,387	2,465,668	329,463	9,321,810
2008	5,730,621	2,166,354	2,809,508	502,228	11,208,711
2007	6,264,069	1,547,234	3,323,081	972,156	12,106,540
2006	4,813,237	1,440,795	3,453,555	1,136,577	10,844,164
2005	6,069,543	1,652,988	4,005,412	355,631	12,083,574

*) As a result of the lacking legal foundation, transit transport data for 2004 and 2005 were not completely covered. Since June 2005, transit transport has been under covered; the figures for 2004 to 2009 have been extrapolated by Statistics Austria.

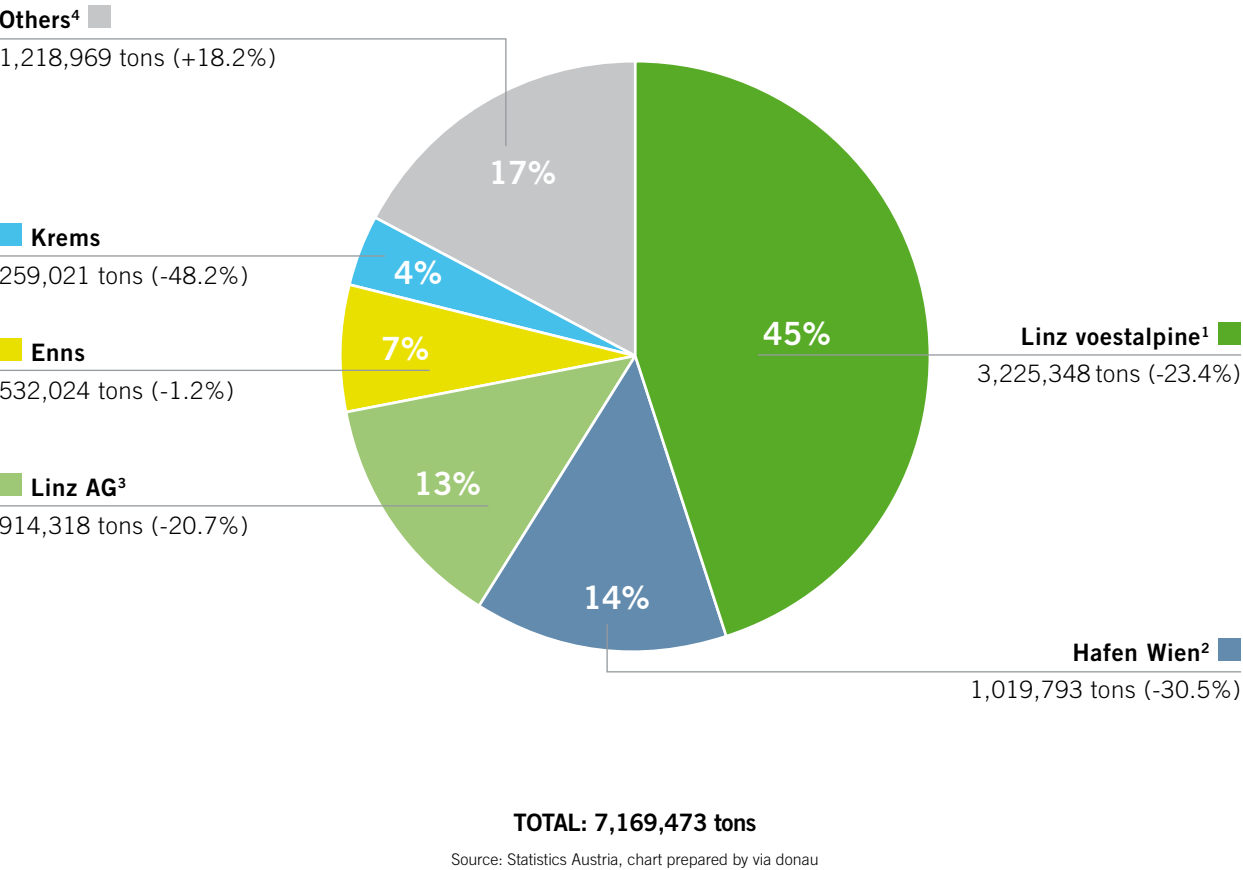
Source: Statistics Austria; chart and table prepared by via donau

TRANSPORT VOLUME

ECONOMIC CRISIS ON THE DANUBE
SLIGHT RECOVERY AT THE END OF 2009

2009 was a very difficult year for goods transport on the Danube. The global financial crisis considerably affected inland waterway transport in Austria and the sector was also faced with navigation blockages of the Danube waterway due to ice and high water. These unfavourable conditions are reflected in the **volume of goods transported** in this year: In 2009, a total of 9.3 million tons of goods were carried on the Austrian section of the Danube, which is equivalent to a decrease of 16.8% or 1.9 million tons over 2008. Consequently, **transport performance** on the Danube within Austria also declined by 15.1% to 2.0 billion ton-kilometres. In autumn 2008, industrial production in Europe started to decline significantly, which also affected the demand for inland waterway transport. **A slight recovery in Europe's economic situation** was seen in the second half of 2009. Regarding the volumes of goods transported on the Austrian Danube, goods transport levels bottomed out in the second quarter of the year. From the second half of 2009 onwards, transport volumes started to increase again.

In the **import sector**, which accounts for 53.1% of the overall volume of goods transported by inland vessels, the transport volume fell by 13.7% or 785,329 tons to 4.9 million tons compared to 2008. About 75% of the goods entered Austria from the east. Compared to the record result of the previous year (+40% compared to 2007), the **export sector** witnessed a decrease of 27.0% or 584,967 tons to 1.6 million tons. Just as in 2008, 52% of the exported goods crossed the eastern border and 48% crossed the western border of the Austrian territory. The volume of **transit** transport on the Austrian section of the Danube decreased by 12.2% or 343,840 tons to 2.5 million tons. This is an extrapolated figure since Statistics Austria uses an estimation model to compensate for the existing under coverage of transit transport. Finally, **domestic traffic** on the Danube waterway fell by 34.4% or 172,766 tons to 329,462 tons.



1 Including water transshipment in the transshipment hall of Industrie Logistik Linz GmbH.
2 The figures for Vienna combine the transshipment volumes of the three ports of Freudenuau, Albern and Lobau oil port.
3 The figures for Linz combine the transshipment volumes of the commercial and the oil port.
4 This includes particularly Aschach, Korneuburg, the heavy cargo port Linz, Pischelsdorf, Pöchlarn, Theiß and Ybbs.

PORT TRANSHIPMENT

HIGHS AND LOWS AT DANUBE PORTS

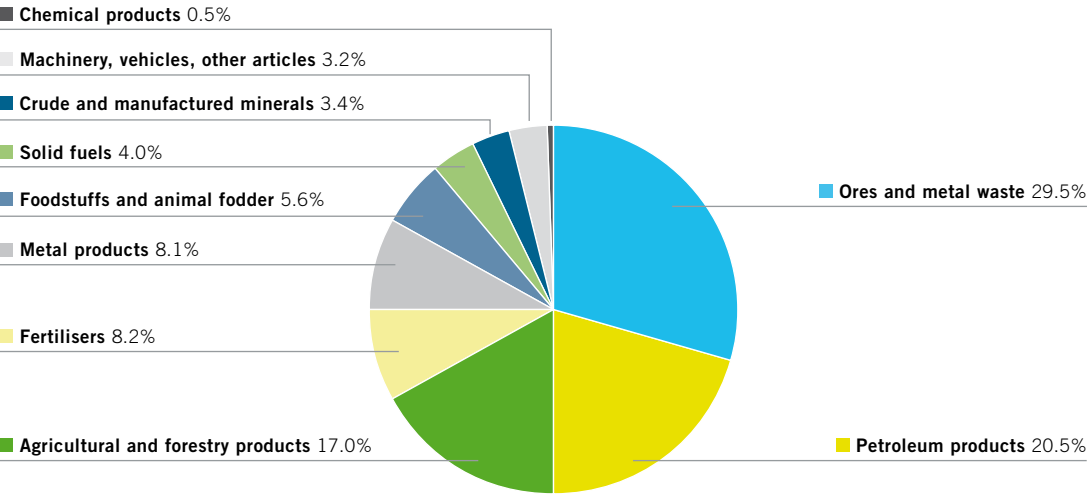
DECREASE OF 1.7 MILLION TONS

Last year, circumstances such as the global financial crisis and navigation blockages of the Danube due to weather conditions significantly affected the development of transhipped cargo volumes at Austrian Danube ports and transshipment sites. Overall, in 2009, **close to 7.2 million tons** of goods were handled in Austrian Danube ports on the water side. This represents a **decrease of 19.3% or 1.7 million tons** in comparison to the previous year.

With 3.2 million tons of goods, the most important port concerning water transshipment volumes remains the **private port of voestalpine** in Linz. Compared to 2008, this represents a decline of 23.4%. While the ports of **Vienna** (-30.5%), **Linz** (-20.7%) and **Krems** (-48.2%) show massive declines in water transshipment, the port of **Enns** was the only one out of the four public ports that managed to almost maintain its volume (-1.2%). The fact that the Austrian Danube ports are not prepared to accept this development is reflected in the ongoing development and expansion plans of the operators. Thus, investments in infrastructure and suprastructure were made in order to cope with the expected recovery in the future.

Apart from the four public ports and the private port of voestalpine, the **other Austrian ports and transshipment sites** have also started to attract attention. In particular, the oil port of MOL in **Korneuburg** and the transshipment site in **Pischelsdorf** (Donau Chemie AG) registered – in spite of difficult general conditions in 2009 – impressive growth figures for water transshipment. In 2009, nearly 620,000 tons of goods (predominantly petroleum products) were handled in Korneuburg, representing a growth of about 15%. Pischelsdorf was even able to record a growth rate of 39% compared to 2008 – 425,000 tons of goods (mostly solid fuels and agricultural and forestry products) were transhipped to and from Danube vessels. Taken together, in 2009 water transshipment volumes in the group of other Austrian ports and transshipment sites **increased by 18.2%** compared to 2008.

Classification of commodities by NST/R*	Domestic	Import	Export	Transit	Total 2009	% over 2008
Transport volume in tons						
0 Agricultural and forestry products	9,236	185,235	111,588	1,277,946	1,584,005	+29.0%
1 Foodstuffs and animal fodder	-	312,571	68,423	139,241	520,234	-12.1%
2 Solid fuels	-	352,456	-	20,993	373,449	-2.0%
3 Petroleum products	270,340	962,421	455,769	220,378	1,908,909	-14.6%
4 Ores and metal waste	-	2,734,094	15,748	1,917	2,751,759	-15.8%
5 Metal products	40,608	157,609	279,521	281,777	759,515	-49.1%
6 Crude and manufactured minerals, building materials	-	112,011	155,331	53,772	321,114	-46.1%
7 Fertilisers	8,865	92,803	472,677	187,690	762,036	-22.3%
8 Chemical products	-	19,892	-	23,697	43,589	-54.4%
9 Machinery, vehicles, other articles	413	16,201	22,330	258,256	297,200	-12.6%
Total	329,462	4,945,293	1,581,387	2,465,667	9,321,810	-16.8%



* NST/R = Standard Goods Classification for Transport Statistics/Revised

Source: Statistics Austria; table and chart prepared by via donau

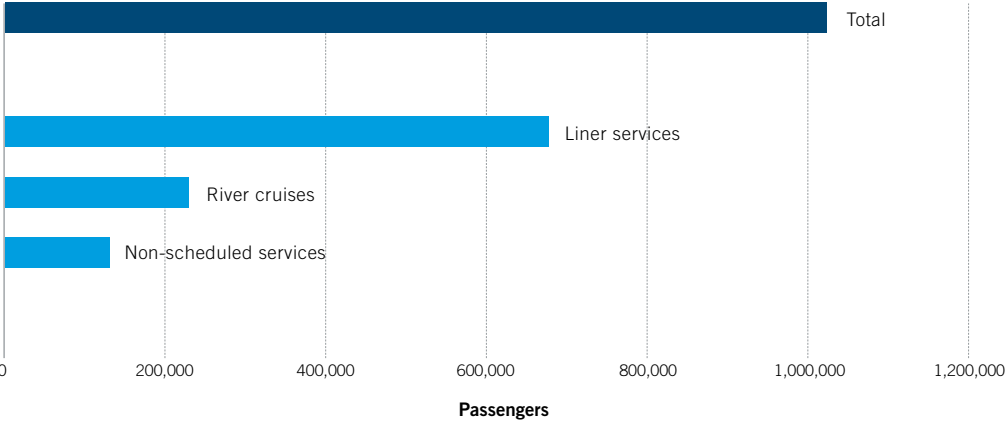
TRANSPORT VOLUME BY COMMODITY GROUPS

TRANSPORT OF BULK DOMINATING
ORES AGAIN IN THE LEAD

Compared to 2008, nearly all commodity groups faced losses in transport volumes on the Austrian Danube due to the unfavourable economic situation. With about 1.6 million tons transported, only the NST/R group of **agricultural and forestry products** recorded an increase of close to 30%. With a high share in the volume of goods transported on the Austrian Danube, this commodity group could, to a certain extent, absorb the overall decrease in transport volume. The majority of transport in this group was carried out as transit transports of grain from Hungary to the West.

Ores and metal waste, the commodity group accounting for the largest transport volume on the Austrian Danube, recorded a decrease of about 16% or 516,825 tons to 2.7 million tons compared to 2008. This is mainly the result of the strongly reduced production output level of the voestalpine in Linz in 2009. Strong losses in absolute numbers were also witnessed for **metal products**, of which 759,515 tons were transported in 2009 – this is equivalent to a decrease of 49.1% or 733,088 tons. Apart from the commodity group of metal products, the most **dramatic losses** in percentage terms compared

to 2008 were recorded in chemical products (-54.4%) and crude and manufactured minerals and building materials (-46.1%). As these commodity groups only have a relatively small share in the total volume of goods transported on the Austrian section of the Danube, the losses in absolute numbers were rather moderate. The water transshipment volume of **containers** in public Austrian Danube ports amounted to around 5,000 TEU in 2009, mainly including empty containers. Although this number accounts for only one percent of the total volume of container transshipment in Austrian ports and thus still remains at a low level, the volume of container transport on the Danube will witness a significant rise in the future. The majority of **roll-on-roll-off cargo** – e.g. loaded lorries, rolling equipment or cars – is included in the NST/R group **machinery, vehicles, other articles**, which accounted for 3.2% of all goods transported on the Austrian Danube in 2009. Like container transport, this type of cargo will also strongly increase its volume on the Danube over the next years.



NUMBER OF LANDINGS AND PASSENGERS AT VIENNA PASSENGER PORT*	Vessel landings	% over previous year	Handled passengers	% over previous year
2009	4,007	-9.6%	352,793	-7.3%
2008	4,434	+1.4%	380,529	+24.8%
2007	4,371	-6.6%	304,836	+15.0%
2006	4,681	+27.8%	265,099	+47.3%
2005	3,664	+9.4%	179,942	+10.9%

Figures from 2006 incl. Twin City Liner
* Landing stages at Handelskai, Nussdorf and Danube Canal, incl. cabin vessels and Twin City Liner

Source: Central Danube Region Marketing & Development GmbH, DDSG Blue Danube Schifffahrt GmbH, Danube Tourist Commission, Donauschifffahrt Wurm + Köck GmbH & Co. OHG, Donau-Touristik GmbH, MAHART Passnave Passenger Shipping Ltd., MS-Schiff Tulln, Nostalgie Tours Wachau, SPaP-LOD, a.s., via donau, Viennese Danube Space Land and Shores Operating and Development Company

PASSENGER TRANSPORT

DAY TRIPS AND CRUISES IN VOGUE
MORE THAN ONE MILLION PASSENGERS

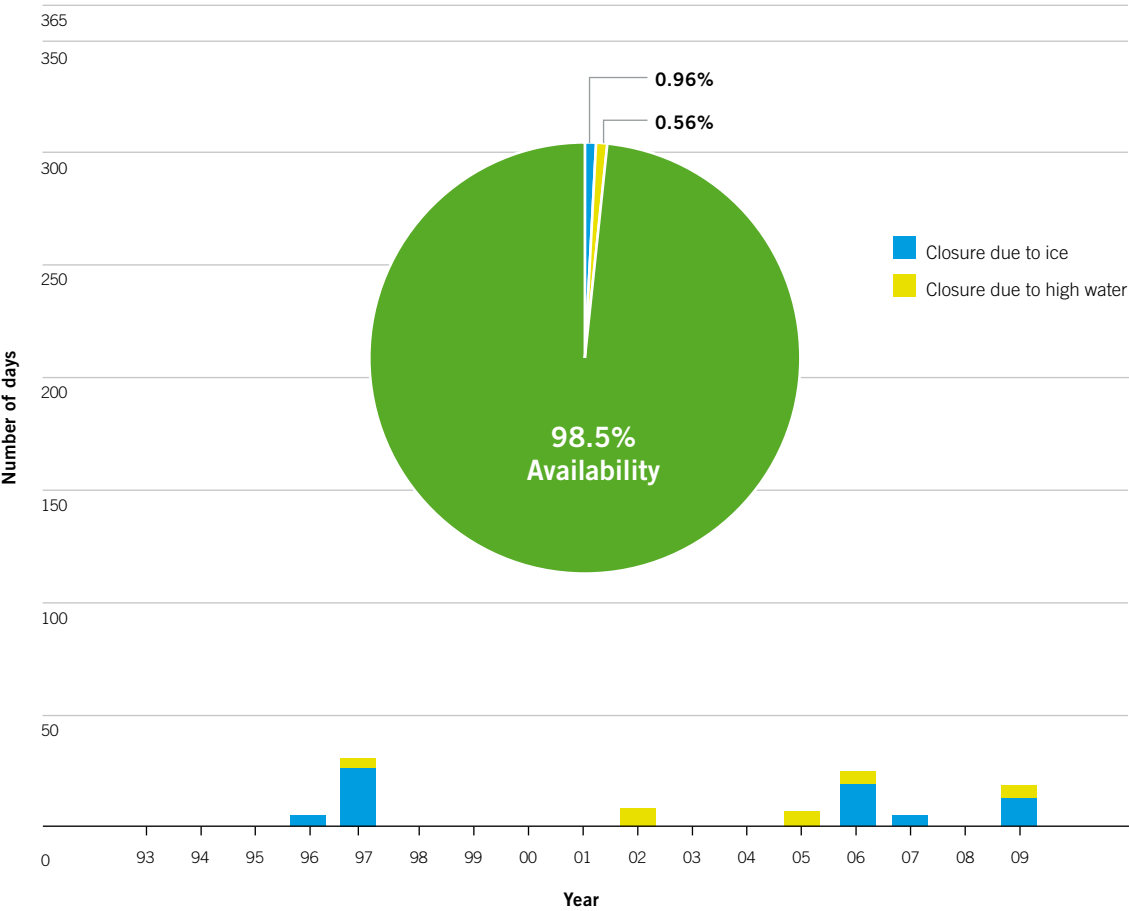
In 2009, a total of more than **1.0 million passengers** were carried by passenger vessels on the Austrian Danube. The majority was accounted for by the approx. 670,000 passengers travelling on liner services. Cabin vessels carried about 225,000 cruise passengers. About 125,000 people were transported on non-scheduled services (theme, special and charter trips).

In 2009, a total of **116 different cabin vessels** operated on the Austrian section of the Danube – an increase of 9.4%, or six vessels, compared to 2008. From a total of 3,210 journeys (downstream and upstream) some 225,000 cruise passengers were transported in 2009. In the long-term comparison with 2002, this figure indicates an increase in passenger numbers by an impressive 89%. Being the most important place of departure and arrival for river cruises, the Bavarian Danube port of Passau recorded about 1,750 landings and 215,000 handled passengers, reflecting a slight increase of around 1,000 passengers compared to 2008. A total of 11 vessels from Austrian companies with a capacity of more than 4,300 passenger places operated **liner services** in 2009. DDSG Blue Danube reported 201,000 passengers (-9.5% over 2008) travelling on its liner services in the Wachau region and in Vienna. The two Twin City Liners carried 130,172 passengers (-9.7%) on the route between Vienna

and Bratislava. Donau-Touristik transported 42,500 passengers on its liner services. The Slovakian and Hungarian hydrofoils, operating on the routes Bratislava – Vienna – Bratislava and Budapest – Vienna – Budapest, recorded 40,915 passengers (+6.3%). The Bavarian operator Wurm + Köck carried a total of 38,000 passengers (+2.7%) on its liner services on the routes Linz – Schlögen – Linz and Linz – Wien – Linz.

Non-scheduled services on the Austrian Danube were provided by about 45 passenger vessels in 2009 (including the vessels primarily operated on liner services) with a total capacity of about 12,000 passenger places. DDSG Blue Danube carried 82,000 passengers on non-scheduled services. The operator Donau-Touristik (Linz) carried 5,600 passengers on non-scheduled services, Nostalgie Tours Wachau (Krems) 2,980 passengers and the MS Stadt Wien (Tulln) 1,646 passengers. Figures for all other companies providing non-scheduled services on the Austrian section of the Danube were not available for the period under review at the time of going to press.

Since passenger transport data on the Danube ceased to be statistically recorded in 2003, due to a revision of legal foundations, the aforementioned figures also include estimations which are based on an average capacity utilisation of 40% for trips on passenger vessels.



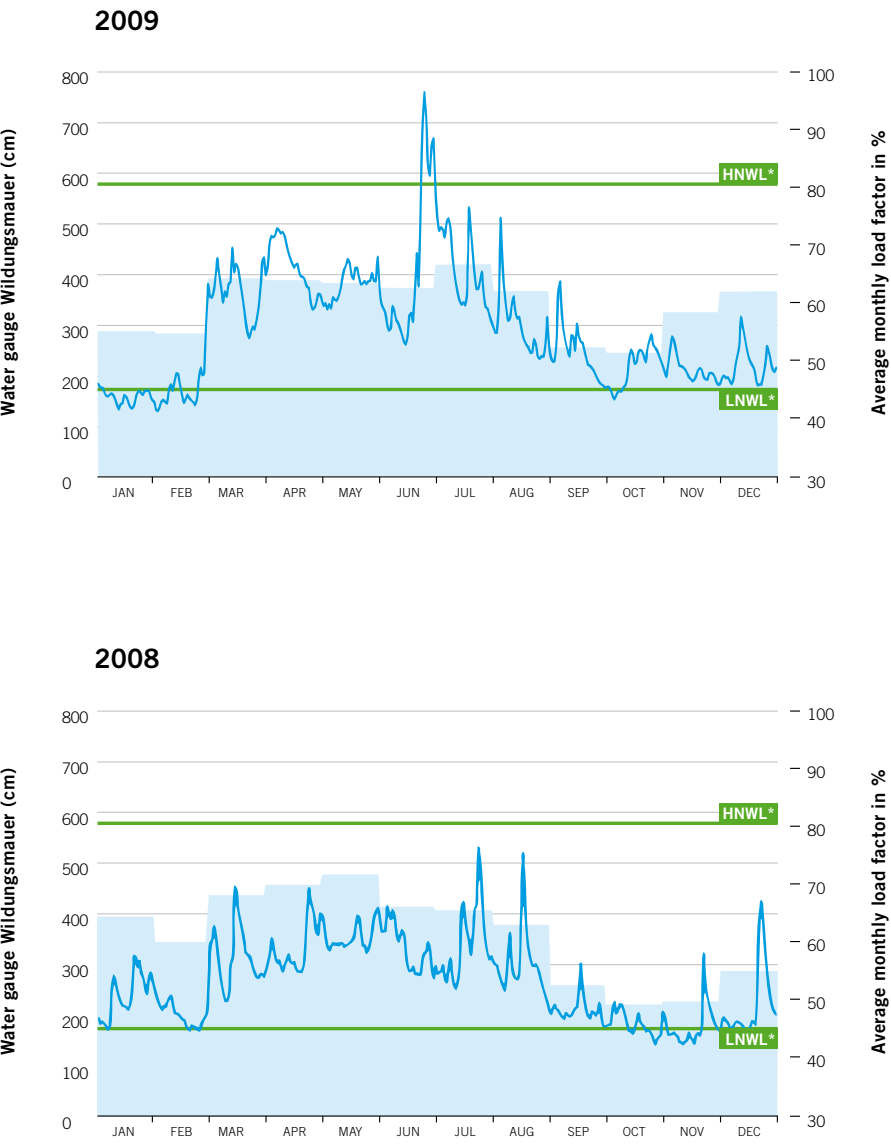
Source: Danube Commission; Supreme Navigation Authority at the Federal Ministry for Transport, Innovation and Technology; via donau

AVAILABILITY OF THE WATERWAY

DANUBE 347 DAYS/YEAR OPEN TO NAVIGATION
CLOSED ONLY IN EXCEPTIONS

Weather-related closures of the Danube waterway may either result from serious **high water** conditions or **strong icing**. While ice impedes navigation mainly during the months of January and February, high water situations mostly occur at the beginning of spring and in midsummer. Weather-related closures may apply to the whole Austrian section of the Danube waterway or individual sections of the river. During these official closures, navigation on the Danube is prohibited. In 2009, the Austrian section of the Danube was open to navigation on **347 days** or for **95.1% of the year**. In this year, sections of the Austrian Danube had to be closed both due to ice (12 days in January) and high water (6 days in June). Using the long-term annual average from 1993 to 2009, the Austrian section of the Danube waterway was **open to navigation on 98.5% of the days** or on **360 days per year**. Even in 1997, the year showing the longest closures due to ice and high water, the waterway was available on 83.8% of the days. **Low water events** do not require the Danube to be closed to navigation. However, in this case the usability of the waterway for goods transport

is restricted in terms of efficiency. The relationship between fairway conditions and the potential capacity utilisation of cargo vessels is described in greater detail in the following chapter «Fairway Conditions». For the shipping industry, the availability of the entire **Rhine-Main-Danube axis** is highly important. On closer examination, the Main-Danube-Canal turns out to be the most severe bottleneck with regard to its availability for navigation. Although there are no closures due to high water on the canal, ice-related closures occur almost twice as often than on the Danube – on average these closures also last about twice as long. In addition, closures on the Main-Danube-Canal also result from maintenance and modification works which occur every two years on average and last for about two weeks. An analysis of the availability of the Main-Danube-Canal for the last 17 years shows that, despite these constraints, the Main-Danube axis was open to navigation 95.6% of the time or on 349 days per year.



*) **LNWL** (low navigable water level): This value represents the water level exceeded on 94% of days during ice-free periods. The current LNWL value for the water gauge Wildungsmauer has been 173 cm since 22 January 2004.

HNWL (highest navigable water level): This value represents the water level which corresponds to the discharge exceeded on 1% of days in a year. At Wildungsmauer the highest navigable water level is currently 576 cm.

Source: Statistics Austria, via donau

FAIRWAY CONDITIONS

VARIED CONDITIONS
AVERAGE LOAD FACTOR 60%

2009 witnessed satisfactory **fairway conditions in the free-flowing stretches** of the Austrian Danube (Wachau region and Vienna to Austrian-Slovak border). On the one hand, fairway conditions from March to July were good as most of the time water levels exceeded the average water level mark. On the other hand, there was a short low water period at the end of September/beginning of October and an extensive period of ice formation in January and February, adversely affecting fairway conditions during the winter months at a time when water levels tend to be low anyway.

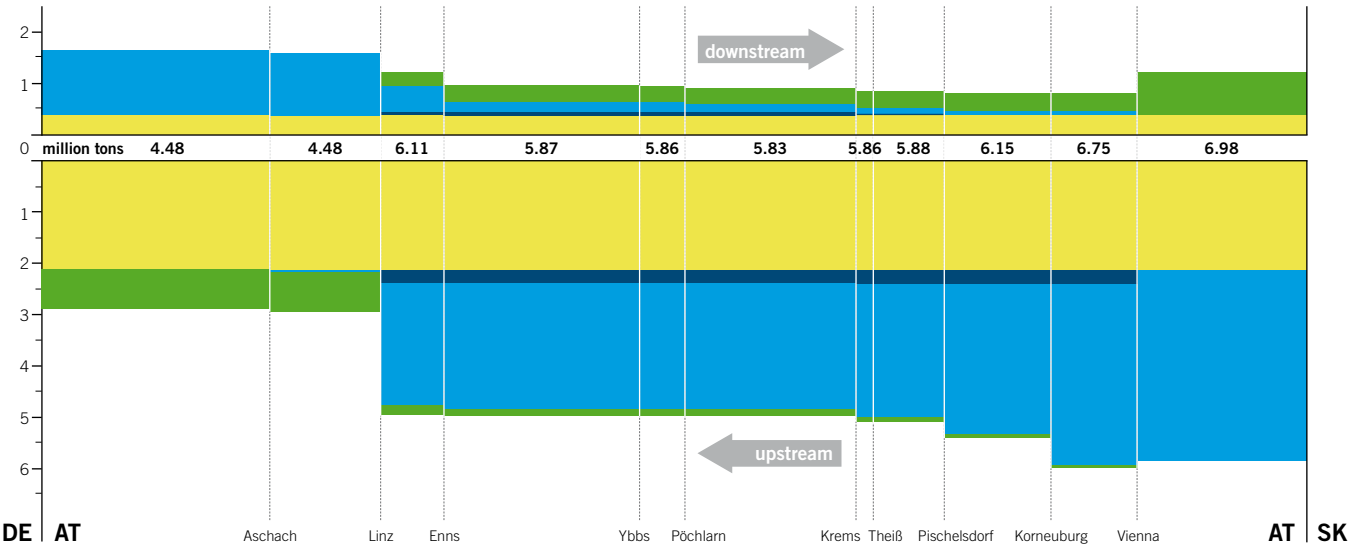
Data collected for 2009 with regard to the average load factor for cargo vessels reflects the Danube’s watercourse in January and February as well as September and October. During these months the average load factor was only between 50 and 55%. Over the whole of 2009, the **average monthly load factor** of cargo vessels was **60.0%**, which is slightly below the figure for 2008 (61.3%)

In inland waterway transport, the available fairway depth determines the **draught loaded** of a vessel and hence the possible loading quantity. When loading their vessels, vessel operators sometimes have to estimate fairway

conditions for the individual sections of a river several days before actually passing a critical section by means of so-called gauges of reference. The **Wildungsmauer water gauge** shown in the chart is an example of such a gauge of reference for the free-flowing stretch of the Danube between Vienna and Bratislava.

Fairway conditions and the **load factor** of vessels are directly related to each other. The general rule is that if relatively high draughts loaded are possible, the average load factor of vessels increases and vessel operators require fewer trips to transport the same volume of goods. These correlations become very clear when comparing the two charts for 2008 and 2009.

Larger cargo volumes per vessel increase the ratio of freight revenues and costs, which in turn improves the **competitive position** of navigation. This again makes navigation as a transport mode more attractive to the manufacturing industry and increases the overall volume of goods carried on the Austrian Danube.



SEGMENT	Length km	Import		Export		Domestic		Transit		Total		Grand Total
		Up-stream	Down-stream	Up-stream	Down-stream	Up-stream	Down-stream	Up-stream	Down-stream	Up-stream	Down-stream	
Border DE/AT – Aschach	63.21	0.00	1.25	0.76	0.00	0.00	0.00	2.13	0.34	2.89	1.59	4.48
Aschach – Linz	31.30	0.05	1.20	0.76	0.00	0.00	0.00	2.13	0.34	2.94	1.54	4.48
Linz – Enns	16.87	2.39	0.52	0.18	0.26	0.25	0.05	2.13	0.34	4.95	1.17	6.11
Enns – Ybbs	54.16	2.47	0.19	0.12	0.32	0.25	0.06	2.13	0.34	4.97	0.90	5.87
Ybbs – Pöchlarn	12.67	2.47	0.18	0.12	0.32	0.25	0.06	2.13	0.34	4.97	0.89	5.86
Pöchlarn – Krems	47.00	2.47	0.14	0.12	0.32	0.25	0.06	2.13	0.34	4.98	0.86	5.83
Krems – Theiß	4.75	2.60	0.10	0.09	0.34	0.26	0.01	2.13	0.34	5.07	0.79	5.86
Theiß – Pischelsdorf	21.25	2.60	0.10	0.09	0.34	0.27	0.01	2.13	0.34	5.09	0.79	5.88
Pischelsdorf – Korneuburg	29.50	2.93	0.07	0.06	0.35	0.27	0.00	2.13	0.34	5.38	0.76	6.15
Korneuburg – Vienna	24.04	3.53	0.07	0.05	0.35	0.27	0.00	2.13	0.34	5.98	0.77	6.75
Vienna – Border AT/SK	45.76	3.70	0.00	0.00	0.82	0.00	0.00	2.13	0.34	5.82	1.16	6.98

Transport volumes in million tons

Source: Statistics Austria; chart and table prepared by via donau

TRANSPORT INTENSITY

350 KILOMETRES
MORE THAN 9 MILLION TONS OF GOODS

In 2009, a total of 9.3 million tons of goods were carried on the Austrian section of the Danube, which has an overall length of 350.51 km. Total **transport volumes in the individual segments** range from 4.48 million tons in the segment between the German-Austrian border and Linz and up to 6.98 million tons in the free-flowing section downstream from Vienna to the Austro-Slovakian border.

As it has the by far largest water transhipment location on the Austrian Danube – the industrial port of the voestalpine steelworks – Linz stands out among other ports and transhipment sites with regard to the quantity of transported goods. Regarding **imports**, voestalpine obtained about 2.07 million tons of ores from Eastern Europe in 2009, mainly from Ukraine (ports of Izmail and Reni) and Slovakia (port of Bratislava). Therefore the Danube section upstream from Linz to the Austro-German border showed a significantly lower goods traffic density than the section downstream from Linz to the Austro-Slovakian border.

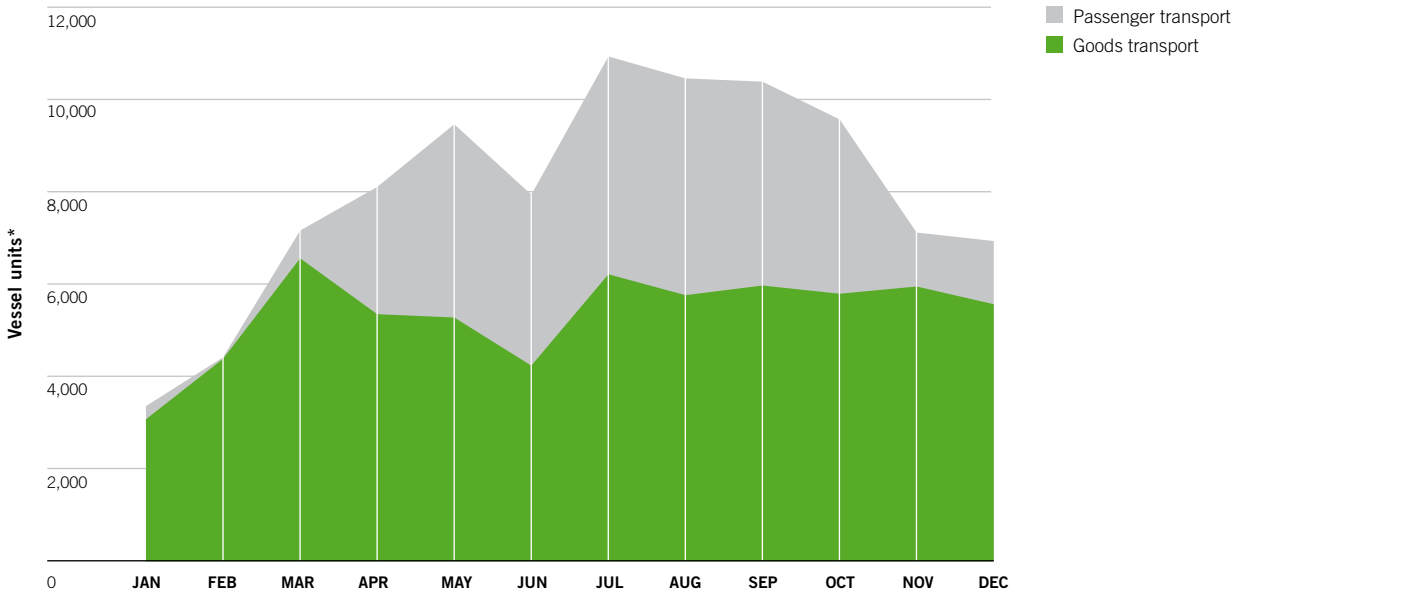
Exports were again dominated by the ports of Linz (voestalpine and oil port), with 0.59 million tons transported upstream on the one hand,

while on the other hand 0.46 million tons of goods were transported from Vienna (port of Lobau) downstream.

With regard to **transit transport**, the comparison of transport flows by transport direction shows a ratio of 6.3:1 (upstream/downstream) – in 2008 this ratio was 3.6:1. On the section from Linz to the Austro-German border, transit transport accounts for 55% of the overall transport volume (+3% over 2008).

With reference to all cross-sections, the **volume of transported goods per day** amounted to 16,004 tons (-2,747 tons over 2008). In the most heavily used cross-section of the free-flowing section east of Vienna, an average of **19,127 tons of goods** were transported **per day** in 2009, which is equivalent to a full load of about 765 lorries (25 net tons) or 478 railway wagons (40 net tons) resp. more than 20 block trains.

In relation to the overall length of the Austrian section of the Danube, an average of **16,350 tons of goods** were carried **per kilometre** in 2009 (-15.1% or -3,000 tons over 2008).



TOTAL PER YEAR	Goods transport	% over previous year	Passenger transport	% over previous year	Total	% over previous year
2009	64,220	-6.1%	31,728	+2.2%	95,948	-3.5%
2008	68,388	-7.3%	31,057	+2.6%	99,445	-4.4%
2007	73,769	+6.6%	30,284	+0.8%	104,053	+4.9%
2006	69,184	-10.9%	30,048	+4.8%	99,232	-6.6%
2005	77,606	+2.1%	28,683	+12.3%	106,289	+4.6%

* Vessel units in goods transport comprise convoys (pushers, motor cargo vessels or motor tankers with cargo and tank lighters or barges) and individual vessels (motor cargo vessels and motor tankers or individual pushers and tugs). Passenger vessels comprise day-trip vessels and cabin vessels.

Source: via donau

LOCKED-THROUGH VESSEL UNITS

96,000 LOCKAGES
MORE PASSENGERS, LESS GOODS

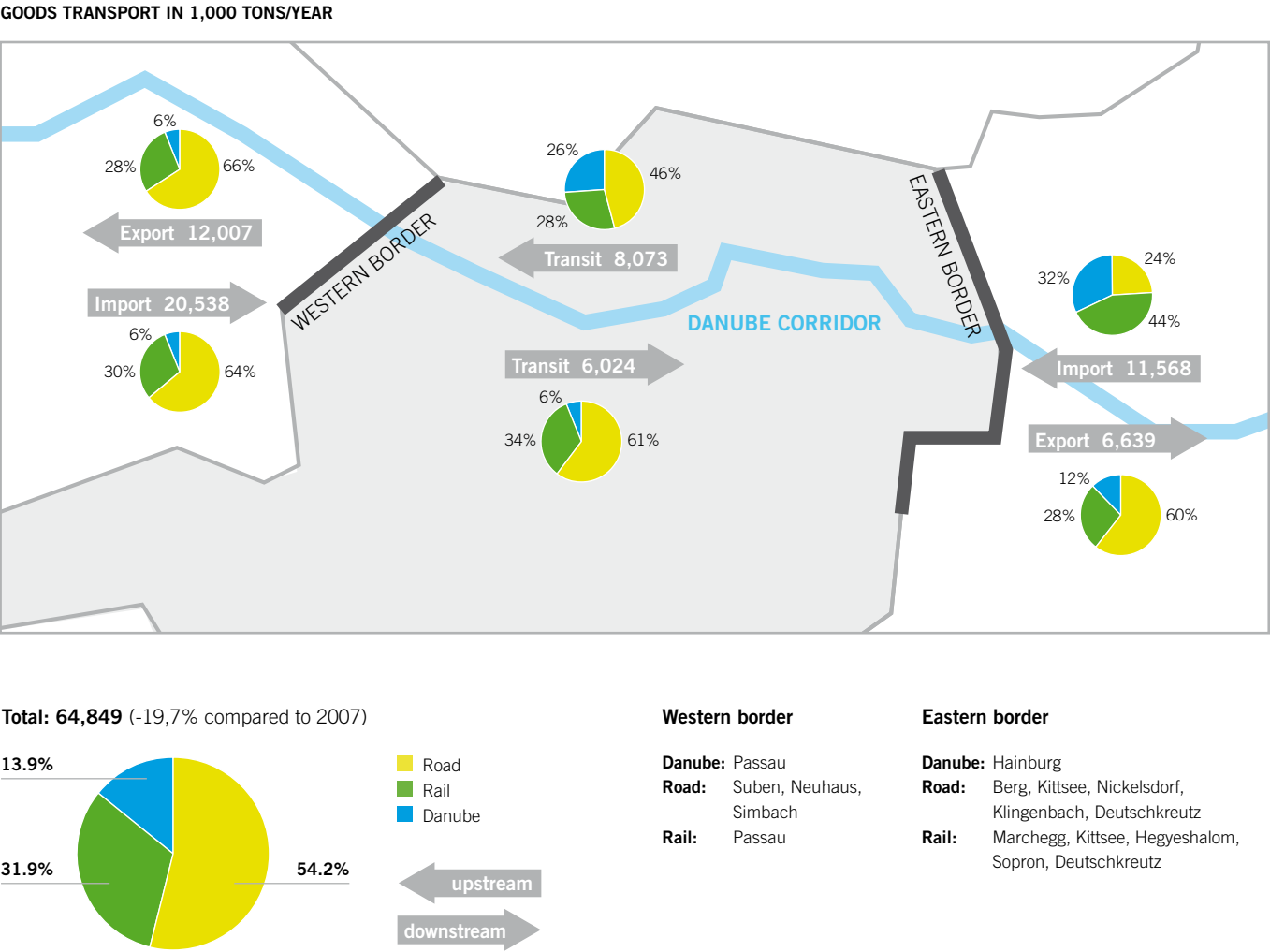
In 2009, a total of 95,948 **vessel units** were **locked through** upstream and downstream at the nine Austrian Danube locks (excluding Jochenstein power station at the Austro-German border). 41,797 of these units were motor cargo vessels and motor tankers (-0.6% compared to 2008), 22,423 were pushers (-14.8%) and 31,728 were passenger vessels (+2.2%). 48,802 cargo and tank lighters or barges (-18.4%) were locked through as part of convoys.

Compared to 2008, the number of **cargo vessel units** that passed through the locks on the Austrian section of the Danube declined by 6.1% in 2009, while the number of locked-through **passenger vessels** increased by 2.2%. On average, this marks a decrease of 3.5% in the total number of all locked-through vessel units in 2009. Goods traffic accounted for 66.9% and passenger traffic for 33.1% of the total vessel volume.

The significantly lower amount of vessel movements in June can be ascribed to the 6-day closure of the Austrian section of the Danube waterway due to high water in this month.

An average of 10,661 convoys and individual vessels passed through any given lock on the Austrian Danube in 2009 (a reduction of 388 vessel units compared to 2008). This amounts to 888 (-32) vessel movements per month and an average of almost 30 locked-through units per day and lock. In general, the vessel volume in passenger transport is considerably lower during the winter months of November to March (particularly so in February).

The highest **vessel volume** in 2009 was again recorded at the Freudenua lock in Vienna with 13,386 vessel units that passed through (8,622 in goods transport and 4,764 in passenger transport), followed by the Greifenstein lock with 10,794 units (7,414 in goods and 3,380 in passenger transport). The lowest volume was reported by the Aschach lock, the westernmost lock in Austria, with 9,767 units (6,257 in goods and 3,510 in passenger transport).



MODAL SPLIT

FURTHER INCREASE IN ROAD TRANSPORT
DANUBE STRONG AT EASTERN BORDER

The transport volume in the **Austrian Danube corridor** has increased rapidly since the 1990s. In 2009, it was slightly less than 65 million tons, which is equivalent to a growth of 120% since 1994. (Data on road transport for 2009 is based on estimations by the Austrian Institute for Regional Studies and Spatial Planning; official data is still pending.) Compared to 2007, the year with the highest transport volume in the Danube corridor to date (80.7 million tons of goods), transport volume in the corridor in 2009 significantly decreased by 19.7% or 15.9 million tons. The chart shows the cross-border **transport volumes** (net tons) for the three transport modes (rail, road and waterway) in the Danube corridor according to traffic mode (import, export and transit).

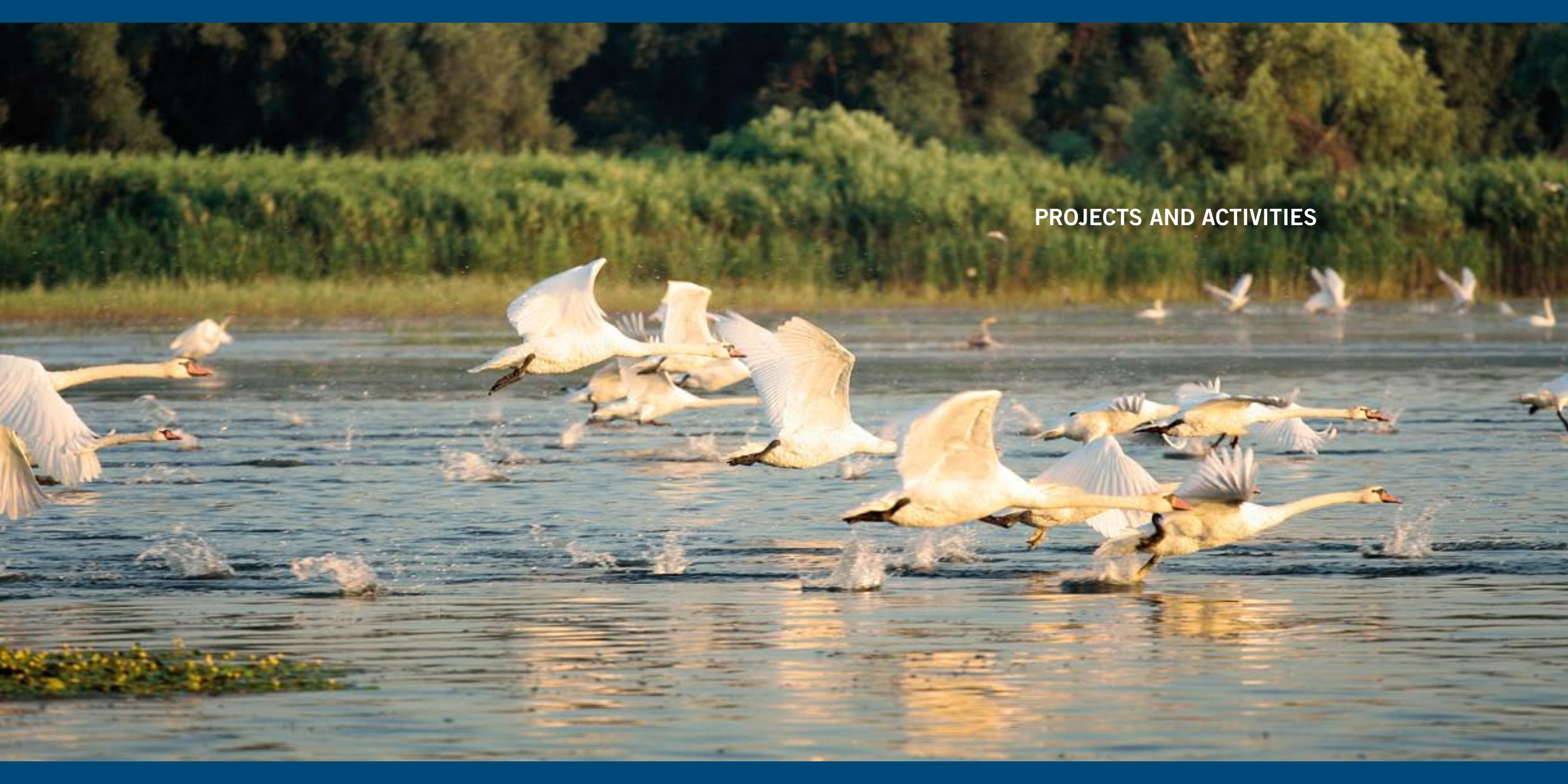
A look at the figures for all transport modes reveals that the quantity of goods transported to and from the west is significantly higher than the volume of goods crossing the eastern border of Austria. At 51 million tons, the level of **bilateral transport** (western and eastern border taken together) in 2009 is still considerably higher than transit transport at 14 million tons. However, **transit transport** has increased massively in the past few years. Today, its volume is nearly 2.4 times higher than in 1994. Transit road transport has increased by a factor of about 5.3.

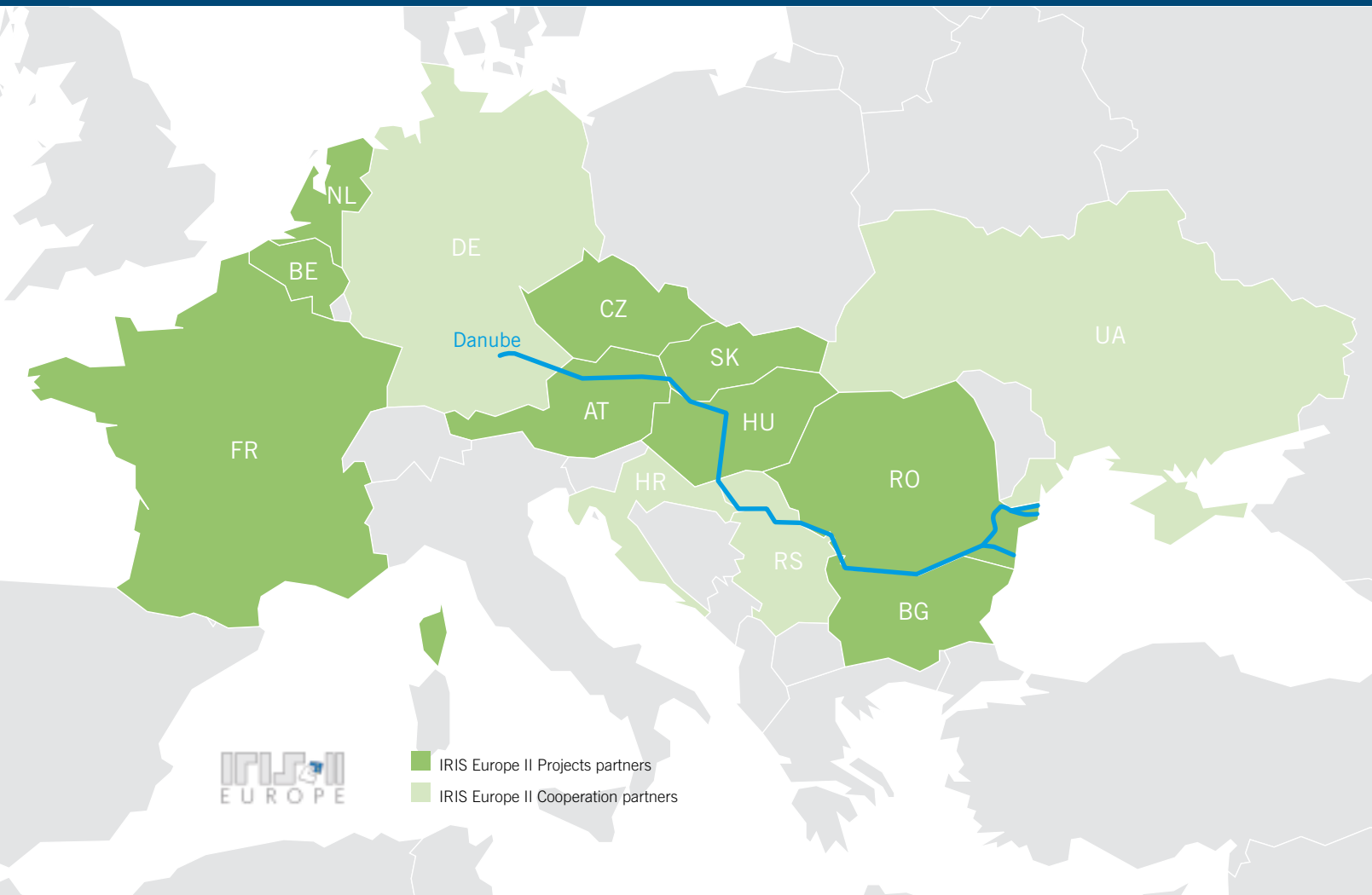
Road transport dominates the **modal split** in the Danube corridor at 54%, meaning that the quantity of goods transported on the road is higher than the volume of goods carried by the other two transport modes combined. Compared to 2007, a clear shift of transport volume from rail to road in downstream exports and transit transport can be seen, whereas Danube navigation was able to keep and even slightly extend its share. Regarding the exports crossing the eastern border, road transport gained 13% and rail transport lost 16% relative to the overall transport volume for this traffic mode. In downstream transit transport, road gained only 6% and rail lost 5%. On the other hand, rail transport was able to gain 15% at the expense of road transport in imports crossing the eastern border, whereas inland navigation managed to keep its remarkable share of 32%.

Despite the dominance of road transport, **Danube navigation** constitutes an important mode of transport in the corridor. Its significance is particularly reflected in upstream transport volumes: Both at the eastern border and in transit transport the Danube accounts for a share of slightly less than a third of the total transport volume. A decrease in the significance of waterway transport can only be seen in the import and export of goods at the western border, which is clearly dominated by road transport in both directions (upstream and downstream).

Source: Austrian Institute for Regional Studies and Spatial Planning (ÖIR); chart prepared by via donau

PROJECTS AND ACTIVITIES





▲ THE PROJECT IRIS EUROPE II WILL GEOGRAPHICALLY AND FUNCTIONALLY EXPAND RIVER INFORMATION SERVICES

◀ WASTE RECEPTION FACILITY FOR CARGO VESSELS AT THE AUSTRIAN DANUBE LOCK PERSENBEUG

DANUBE REGION

10 RIPARIAN STATES 2,888 KILOMETRES OF DANUBE WATERWAY

In 2009, under the lead of the General Directorate for Regional Development, the EU initiated the so-called **Strategy for the Danube Region**. This should generate a European strategy for the future development of the Danube region in collaboration with the 14 Danube countries concerned. The final result will be a comprehensive action plan comprising concrete measures, which will define the framework for the awarding of European funding for regional development during the period 2014–2020. The strategy should be finalised during 2010 and politically adopted in 2011. The development of the Danube waterway is considered to be an integral part of this. Moreover, the «Joint Statement on Guiding Principles on the Development of Inland Navigation and Environmental Protection in the Danube River Basin» was further developed by the **International Commission for the Protection of the Danube River (ICPDR)** during 2009. For example, a handbook for ecologically-oriented infrastructure development on the Danube was developed which is designed to be a guide to the integrated planning of waterway infrastructure projects with special attention given to general ecological requirements.

In 2009, via donau and partners from Danube riparian states started multi-annual, EU co-funded projects designed to address common tasks in the Danube region. The WANDA project aims at a sustained improvement of the collection, treatment and disposal of **waste generated by inland vessels** along the Danube. A project with the title NELI will expand the opportunities for **training and knowledge transfer** in the area of Danube navigation and logistics. NEWADA, in turn, brings waterway administrators for the Danube around a single table to exchange experiences and to coordinate their future plans. In 2009, the project PLATINA, initiated by the European Commission, was

again the driving force for the implementation of the **European Action Programme for the promotion of inland waterway transport (NAIADES)**. Milestones were the publication of a handbook with successful inland navigation projects from the whole of Europe, the establishment of a network comprising the European inland navigation colleges (EDINNA), the setting-up of an Internet portal containing all information regarding River Information Services (RIS) and the founding of an expert group to promote innovation in inland navigation.

In the area of **River Information Services (RIS)**, the project team of IRIS Europe II has been working on the geographical and functional expansion of RIS since January 2009, with the aim of increasing both the efficiency and the safety of transport on European waterways. With reference to the Danube, the project focuses on, e.g., the improvement and pilot implementation of fairway information services, the provision of water gauge forecasts and ice condition reports and the pilot operation of the international exchange of RIS data between the national RIS centres in Austria, Slovakia and Hungary and their users as well as European central services which are developed in the course of the PLATINA project.

FURTHER INFORMATION

- ec.europa.eu/regional_policy/cooperation/danube
- www.wandaproject.eu
- www.neliproject.eu
- www.newada.eu
- www.naiades.info
- www.iris-europe.net



▲ INNOVATIVE REGULATION OF LOW WATER LEVELS ON THE FREE-FLOWING STRETCH OF THE DANUBE EAST OF VIENNA

◀ THE PORT OF VIENNA AS DISPLAYED ON THE ENHANCED ELECTRONIC NAVIGATIONAL CHART

► VIA DONAU'S NEW SURVEYING BOAT «ALPHA» EQUIPPED WITH DUALHEAD ECHO SOUNDER



WATERWAY

ECONOMIC AREA AND HABITAT IMPROVED INFRASTRUCTURE AND SERVICES

Near to **Witzelsdorf**, in the free-flowing stretch of the Danube to the east of Vienna, innovative methods for the regulation of low water levels were put to the test in 2009 during the preparation of the Integrated River Engineering Project (FGP). Due to an **integrated planning approach** it was possible to develop a project from which ecology and navigation profit in equal measure: the creation of natural river banks through the removal of bank reinforcements and the construction of optimally shaped and arranged groynes. Construction work on a 1.3 kilometre stretch was completed in April 2009. The EU provided about 50% of the funding for the Witzelsdorf project within the framework of the TEN-T funding of the Integrated River Engineering Project.

Furthermore, in 2009 via donau started the project **«Customer-Oriented Waterway Management»** (KWSM) with the primary goal of providing an optimal Danube waterway for shipping companies and for commerce. The first important result of 2009 was the online provision of detailed graphical information regarding the Danube's shallow locations via the DoRIS website. This measure, jointly initiated by via donau and the Supreme Navigation Authority (OSB) in the Federal Ministry for Transport, Innovation and Technology, should considerably improve the ability to plan transports on the waterway.

A further important modernisation was undertaken by via donau in the area of **hydrography**: two new surveying boats – «Alpha» and «Epsilon» – as well as a modern measuring system (multi-beam echo sounder with double pulse system) were procured. Because of the greater area coverage of the double pulse system, as of the beginning of 2010, measurements of shallow locations in the Danube can be carried out more efficiently and with a higher degree of accuracy. The new measuring system furthermore allows the

mapping of very shallow areas close to the river bank and also reduces the fuel consumption of the survey boats through higher fuel efficiency.

With regard to the **electronic inland navigational charts** published by via donau, 2009 saw a number of important innovations. Thus the half-yearly depth data for both free-flowing stretches (east of Vienna and the Wachau) will from now on be processed more rapidly and published earlier. The turnaround time comprises three to four weeks following the completion of bathymetry and a processing time of two weeks for the preparation of digital inland navigational charts. Further innovations include for example the integration of new depth information for the Danube Canal and information regarding the infra- and suprastructure of the ports of Enns and Vienna.

The **electronic lock logbook** that was conceived and implemented within the framework of the development of River Information Services (RIS) went into full operation on 1 January 2009. The paper-based lock logbook and statistics book previously used by the Austrian Danube locks thus belong to the past now. Supporting the locks personnel in the planning, carrying out and documentation of lock operations, the electronic lock logbook will, in the future, also serve to provide fundamental data for new River Information Services related to transport and logistics. These are presently being drafted in collaboration with a variety of companies from the transport and logistics sector and will then be implemented within the context of a pilot project.

FURTHER INFORMATION

- www.donau.bmvit.gv.at
- www.doris.bmvit.gv.at



ENVIRONMENT

RIVER BANKS RESTORED A PLUS FOR ENVIRONMENT AND NAVIGATION

The **Thurnhaufen bank restoration project** within the Danube Floodplain National Park constitutes the first river bank restoration undertaken for a navigable river the size of the Danube and was awarded the title **Best LIFE-Nature Project 2007-2008** by the EU in 2009. The excavation work that was necessary to remove around 50,000 m³ of riprap, represented a significant intrusion into the natural habitat: The work was carried out using heavy machinery and it was also necessary to fell a number of trees. The intervention has however already paid off because both the national park's flora and fauna and flood water protection are benefitting equally from the conversion of the previous blockstone bank into a natural river bank. The resulting cross-sectional expansion will allow flood waters to dissipate more readily in the future.

During the preparations for the Integrated River Engineering Project (FGP) to the east of Vienna, an additional 1.3 kilometres of river bank have already been restored in the course of the **Witzelsdorf pilot project**. Preparations are underway for further bank restoration work within the framework of the nature experiment at Bad Deutsch-Altenburg.

Modern river engineering that reconciles the interests of navigation and fisheries and takes into account ecological aspects can also be found on the **upper Austrian Danube**. In the **Enghagen** bank area, the approach to the Mauthausen bridge that lies two kilometres downstream was a navigational bottleneck. At the same time the Enns fishery association was calling for the area around the mouth of the «Hamberger Altarm» to be remodelled, in order to improve the freshwater ecological situation. In order to reconcile the desires of both parties, licensed fishermen, freshwater ecologists and navigation experts were included already during the planning phase. The

time schedule for the construction work even took into consideration the spawning season of the fish species present. Construction work was managed by via donau and completed in November 2009.

In order to improve the conditions for navigation, the training wall in the Enghagen area is being removed and replaced with truncated, fish-friendly structures. In the process, around 100,000 tons of blockstone are being removed and re-deposited at other locations as gravel banks and islands. These provide protection against breaking waves and create unique habitats for organisms that prefer flowing water.

Nature and navigation are also inseparably connected with one another in the **Wachau** region. The LIFE+ project **«River habitat Mostviertel – Wachau»** that commenced in 2009 aims at contributing to the further successful structuring of the Danube. A goal of the funded project is the restoration of branches with year-round flow in the Wachau in the vicinity of Schallermersdorf and Schönbühel. The removal of a transverse structure between Weißenkirchen and Dürnstein will enable the area of water located behind the «Frauengärten» training wall to once more communicate directly with the Danube. This should create permanent habitats typically found in rivers, as envisaged by the EU Water Framework Directive.

FURTHER INFORMATION

- ec.europa.eu/life
- www.donau.bmvit.gv.at
- www.donauauen.at
- www.life-mostviertel-wachau.at



BEFORE

AFTER

▲ BANK RESTORATION
NEAR WITZELSDORF AS PART
OF THE INTEGRATED RIVER
ENGINEERING PROJECT (FGP)

◀ THURNHAUFEN BANK
RESTORATION WITHIN
THE DANUBE FLOODPLAIN
NATIONAL PARK, AWARDED
BEST LIFE-NATURE PROJECT
2007–2008 BY THE EU
IN 2009 ►





▲ HOW WILL CLIMATE CHANGE AND EXTREME WEATHER CONDITIONS AFFECT INLAND NAVIGATION?

► THE «CLEANEST SHIP» MTS VICTORIA, OWNED BY THE ENERGY GROUP BP, GATHERING WAY



ENVIRONMENT

CLIMATE CHANGE INLAND NAVIGATION REACTS

Alongside the optimisation of the environmental performance of inland navigation, coming to grips with **climate change** within the framework of international research projects is an important concern for via donau. Climate change may impact the Danube's discharge regime, affecting the waterway as infrastructure, flood water protection measures and the river's ecosystem. Initial investigations regarding the Austrian Danube are indicative that climate change will actually lead to a balancing of the annual discharge distribution that is more favourable for inland navigation purposes. To date, predictions of extreme flooding incidents connected with climate change cannot be made.

The ECCONET project is examining **the consequences of climate change for inland navigation in Europe** with a focus on the Rhine-Main-Danube corridor. This involves both the analysis of the results of already existing studies and the carrying out of new meteorological and hydrological calculations and trend analyses. The associated study of suitable adaptation measures is of relevance for, amongst other things, vessel operations, shipping technology, river engineering activities as well as methods for the forecasting of water conditions.

The EWENT project that commenced in 2009 is concerned with the **consequences of extreme weather conditions for the EU's transport system**. The goal is to identify the risks and consequences for the transport sector and to subject these to a monetary appraisal. Measures for the improved handling of extreme weather conditions will be developed and policy recommendations formulated for decision makers from commerce, infrastructure organisations and politics.

In the SUPERGREEN project, a range of representative European transport corridors are being analysed with regard to measures for **improving the environmental friendliness of the European transport system**. The chosen corridors are being subjected to benchmarking, whereby environmental aspects, infrastructure parameters, exhaust gas emissions as well as external and internal costs are being examined. To conclude, the application of «green» technologies within the selected transport corridors will be analysed in more detail.

The **LDS – LNG propulsion for Danube inland navigation** project, developed in partnership with the Technical University of Vienna and Salzburg AG, was approved for funding by the Austrian Climate and Energy fund. In this feasibility study, the sustainable reduction of CO₂ output and of particle and NO₂ emissions through the use of LNG (liquefied methane and biomethane) for inland navigation on the Danube will be studied.

«**The Cleanest Ship**», a demonstration project, was successfully completed in 2009 within the framework of the EU Project CREATING and included a detailed final report. The goal of the project was to demonstrate the various options and innovations available for a further reduction of vessel emissions. The corresponding emission reduction technology was implemented on the «Victoria», a lubrication oil tanker operated by the energy group BP.

FURTHER INFORMATION

- www.creating.nu
- www.via-donau.org/projekte/projektdatenbank



▲ APART FROM ITS HIGH RELIABILITY AND ENVIRONMENTAL FRIENDLINESS, DANUBE NAVIGATION BOASTS AN IMPRESSIVE DEGREE OF TRANSPORT SAFETY ►



SAFETY

GETTING THERE SAFELY A PLUS FOR ENVIRONMENT AND COMMERCE

The European Union has decided to promote those modes of transport that excel in terms of low energy intensity, greater environmental friendliness and higher safety, features that are ideally exemplified by inland navigation.

The **overall accident figures** for Danube navigation are extremely positive: thus there were only 18 traffic accidents on the Austrian Danube involving damage during the whole of 2009, whereby none of these involved injury to or the death of any person. Eight of these accidents were collisions, whilst the remaining 10 cases involved damage to river banks or facilities or the running aground of a vessel.

In the area of **dangerous goods transport**, on 1st March 2009, the European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) came into force for contracting parties. Outside of the Rhine region there are thus, for the first time, binding international regulations governing the transport of dangerous goods on European inland waterways, which replace the previously existing national regulations. The ADN guarantees a consistently high level of safety, which can also be inspected within the framework of the newly introduced «River State Control», as well as the reciprocal acceptance of documentation. Therefore, the ADN authorisation certificates issued by Austria since 1st March 2009 are now also accepted on the Rhine. Within the framework of the further development of **River Information Services**, the EU co-financed project IRIS Europe II aims at increasing safety in waterway traffic by means of multiple activities started in 2009: development of a reasonably priced navigation compass for

the determination of the exact orientation of a vessel on the waterway; commencement and improvement of the pilot operation of an accident notification system; provision of safety-related information concerning the AIS infrastructure as well as implementation of additional on-board and land infrastructure in the Danube region (Slovakia, Hungary, Romania). The above listed activities should be completed by the end of 2011. In addition to the above, within the framework of a number of European projects **navigation systems** are developed and their safety-related aspects examined with the involvement of via donau. Such projects include a concept study for the use of automated vehicle guidance systems (SATVeC), the development of tracking-and-tracing technologies and services based on EGNOS/Galileo (MENTORE), a system for collision avoidance using 3D visualisation of vessel dimensions and risk zones (ARIADNA) as well as a concept study for a navigation support system that helps the ship crew when navigating in narrow surroundings (NAVWAT).

FURTHER INFORMATION

- versa.bmvit.gv.at
- www.iris-europe.net
- www.via-donau.org/projekte/projektdatenbank



◀ MULTIMODALITY IN PRACTICE -- THE STATE-OF-THE-ART CONTAINER TERMINAL OF WIENCONT IN THE PORT OF VIENNA WITH A TRANSHIPMENT CAPACITY OF 500,000 TEU

COMMERCE

FACE TO FACE AND DIGITAL NEW SERVICES FOR COMMERCE

From via donau, companies receive all the basic information they need as well as the right contacts to **carry out transports on the Danube** – objective and at a single address. This service is highly valued and gladly made use of: in 2009 more than 300 enquiries were received.

Two new **Internet information portals** assist in providing information and enhancing transparency: on the «Blue Pages» Danube navigation and logistics companies are introduced; the «European Funding Database for Inland Waterway Transport» provides information about European and national funding programmes. Both portals were developed in 2009 by via donau. The web platform «Danube Ports Online», set up in 2008, rounds off the online information package offered to commerce. Since the end of 2008 the public ports of Linz, Enns, Krems und Vienna together with via donau and the Austrian Institute for Regional Studies and Spatial Planning (ÖIR) have been developing **strategies to encourage companies to settle along the Danube waterway**. Among the aims are the creation of attractive conditions for the development of new operational and logistics centres and a strengthened anchoring of the interests of inland navigation in spatial and economic planning at the national, regional and municipal level. Strategically important areas surrounding Austrian Danube ports are being identified by the project partners. These data should provide a basis for the drafting of recommendations for the sustainable development of Austrian port locations.

Inland navigation has become an integral component of multimodal transport chains. Intelligent transport systems for combined transport must be further developed. Therefore, there is a need for a more efficient use of existing **River Information Services (RIS)** by the players in the transport

logistics sector as well as for the development and provision of access to novel solutions and information services. Since 1st February 2009, new services for commerce that build on the current status of RIS are being developed within the framework of the EU project RISING. These include, for example, information for journey planning, support of fleet and port/terminal management or variance management.

FURTHER INFORMATION

- www.blaue-seiten.at
- www.naiades.info/funding
- www.danubeports.info
- www.rising.eu





Danube waterway

UN/ECE Classes

- | | |
|--|---------------------|
| | VII |
| | VIa, b, c |
| | Va, b |
| | IV |
| | III |
| | I, II |
| | Other |
| | Lock |
| | Major Port |
| | Other Port |
| | Capital City |
| | Other City |
| | National border |
| | Chainage (river km) |