



SPOTLIGHT
Savills Research

INDUSTRIAL & LOGISTICS MARKET

A NEW CHAPTER BEGINS

LISBON MARKET | 2022

savills



LISBON HISTORIC TAKE-UP

RECORDED IN 2021, MAY HAVE BEEN THE TIP OF THE ICEBERG, IF SUPPLY CAN KEEP UP WITH THIS HOT DEMAND, IN EFFICIENT

In 2021, the I&L market reached the highest take-up ever in 2021, with more than 500,000 sq m. In the Lisbon Metropolitan Area, where the largest percentage of supply and demand is concentrated, an approximate take-up of 418,000 sq m was recorded in 2021, compared to 228,000 sq m in 2020 and 207,000 sq m in 2019.

The industrial & logistics market's enormous development potential has been held back by a supply that is not only scarce but which also fails to meet technical requirements and quality standards.

For the industrial & logistics market players, Covid19-pandemic represented an opportunity for expansion, growth, innovation, modernizations and above all, a demand for rapid adaptation.

Many experienced challenges that tested their resilience and ability to adapt. As a strong ally, the success of e-commerce, the result of a concerted effort by operators, distributors, and brands, has been vital in boosting the industrial & logistics market. With the pandemic, new consumption patterns emerged, and the number of online buyers and users will continue to grow in the coming years.

In recognition of the market's development potential, this report developed by Savills Portugal aims to outline a general picture of the main logistics axes integrated into the Lisbon Metropolitan Area, characterizing them from the point of view of supply and demand profile. In a market lacking structured and up-to-date public information, where a large percentage of operations are carried out directly, we believe that this report constitutes an added value for all national and international players in the industrial & logistics sector.



Savills Commercial Research

We provide bespoke services for landowners, developers, occupiers and investors across the lifecycle of residential, commercial or mixed-use projects. We add value by providing our clients with research-backed advice and consultancy through our market-leading global research team.



Patrícia de Melo e Liz
Chief Executive Officer
patricia.liz@savills.pt



Paulo Silva
Head of Country - Savills
paulo.silva@savills.pt



Paula Sequeira
Director Consultancy
paula.sequeira@savills.pt



Joana Rodrigues
Director Architecture
joana.rodrigues@savills.pt



Pedro Figueiras
Director Industrial & logistics
pedro.figueiras@savills.pt



Alexandra Portugal Gomes
Head of Research
alexandra.gomes@savills.pt



LISBON MACRO ECONOMIC

- According to Instituto Nacional de Estatística (INE), in 2021, exports and imports of goods increased by 18.1% and 21.1%, respectively (despite a decrease of -10.3% and -14.8% in 2020). Compared with 2019, exports increased by 6.0% and imports grew by 3.2%. The exports are driven by countries such as Spain, Germany, France and UK, which account for about 73% of the total exports in 2020 and 2021.
- By product groups, machinery, mechanical appliances (14,3%) and vehicles and transport equipment (13,2%) are the most exported. Base metals and mineral fuels registered the biggest growth rate, with 47% and 37% respectively.
- By means of transportation, Sea freight accounted for 51.5%, road freight 43.2%, Air freight handled 1.7% and rail accounted for 0.5% of total tonnes exported. Internally, the road freight represents 87% of the goods transported and the rail has a share of 13%.
- Since 2019, regarding the birth rate of companies per sector of activity, Portugal has been experiencing a slight decrease of 1%, worsened by the pandemic. However, the transportation and storage sector has been in a positive trend, with an increase of 17.4 percentage points, since 2015. The Lisbon Metropolitan Area and North regions represent 66% of the market (35% and 31% respectively). The transport and storage sector is estimated to account for 5% of companies' Gross Added Value for the Portuguese economy.
- In the EU context, the manufacturing indicators show that the manufacturing sector is expanding to pre-pandemic levels, with rising production, orders and employment. The EU Commission predicts that hiring intentions in this sector will be 13% above the long-term average. In addition, the percentage of the population employed, in Portugal, in the transport and storage sector has been increasing and currently (2020) stands at 14%.

MAIN CHALLENGES:

- In the short term, a new wave of the pandemic may affect the energy goods prices, affecting directly the transportation sector. Rising inflation presents a risk as well to the transportation and storage sector, due to its implication on demand, wages, interest rates and price of storage. A new configuration of the supply chains, with more emphasis on the last mile will have impact on available space.
- In the long term, the sector will need to address digitalization and its impacts on both company management and customer service. The primacy of speed implies greater streamlining of processes and monitoring, guaranteed by digitalization. On the other hand, this technological revolution will require skilled labour, a new digital management of companies, changes in infrastructure and will raise concerns regarding sustainability.
- The Portuguese economic recovery plan (2020-2030) concedes a strategic importance to the logistics sector and supply chains by "favouring the creation of conditions for reconversion of enterprises and the reindustrialization of the country", as well as to improve the competitiveness of the port system and maritime transport, by promoting logistics networks and road-rail links to ports, exploiting the opportunities created by the reconfiguration of major maritime routes for international trade.



LISBON

E-COMMERCE

BOOSTING I&L

Over the past decade, internet evolution and the access of online sales channels have expanded notoriously.

With the innovations applied to digitalization strategies, the accessibility to eCommerce consumers have gained more confidence in online operations, for the acquisition of all types of products, whether it is fashion or meals delivered by Uber Eats or Glovo.

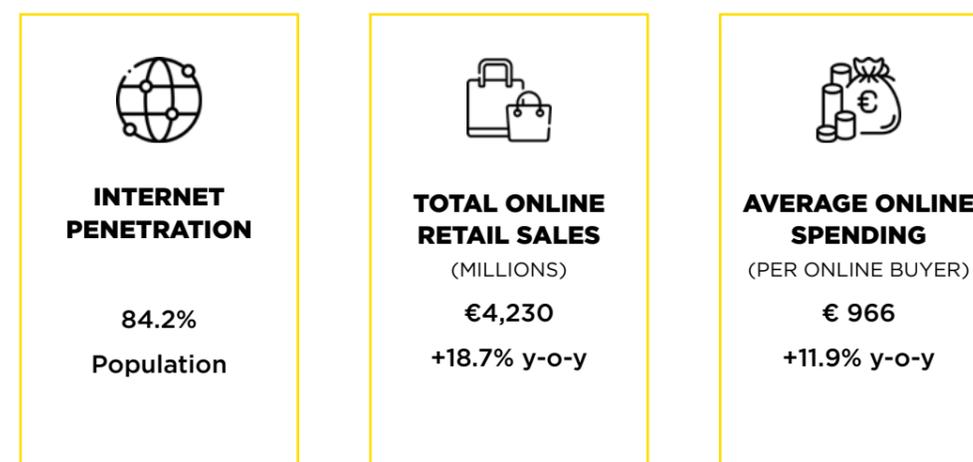
Worldwide, the Covid-19 pandemic has boosted eCommerce, and Portugal was no exception. According to Forrester, online buyers increased from 40% to 59% between 2015 and 2021 and is expected to increase to 68% in 2025. However, Portugal is still below some European countries and the Western Europe average, where about 68% already use electronic means for retail, while Portugal is 25 percentage points below, with about 43%.

Due to the need and preference to use eCommerce, many growth opportunities have emerged for the Industrial and Logistics sector, where storage and distribution networks had to reinvent themselves. e-Commerce has significantly increased the convenience and ease of transactions, causing an impact in the entire production and logistics process. All players realized that online selling was an opportunity, and an agile and quick adaption was in order.

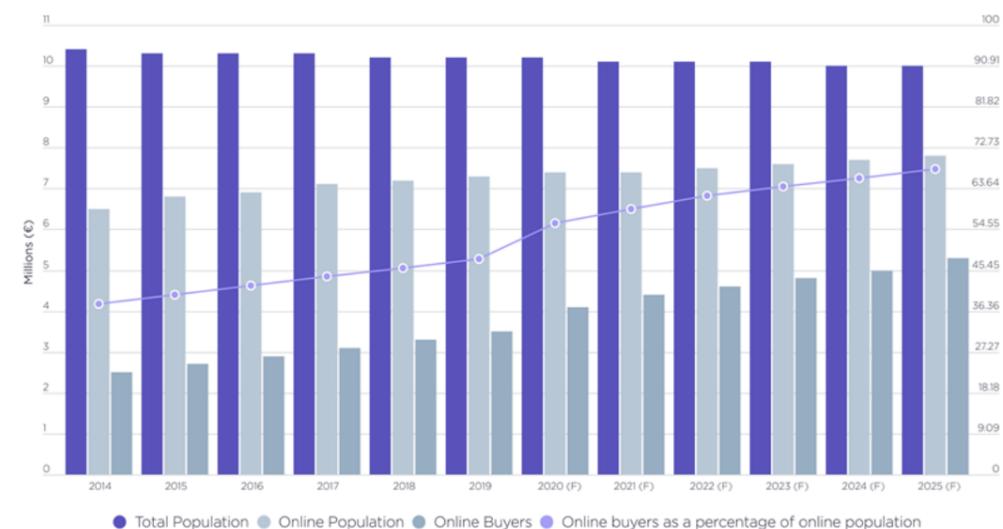
Although eCommerce's market in Portugal is at a somewhat preliminary stage compared to other European countries, an increase is expected in the coming years.

The pandemic has brought new trends and the simplicity inherent in online shopping is increasingly felt by the amount spent per year on online shopping. According to the "CTT e-commerce report", in Portugal, on average, each online buyer spent about 1,075€ in 2021, while in 2020 it was about 998€. But the most impactful was the evolution since 2019, which clearly showed the effects of the pandemic in Portugal, where the average amount spent by online buyers was approximately 548€ per year, showing an increase of 96% between 2019 and 2021.

According to the study "European Real Estate Logistics Census" carried out by Savills with Tritax Eurobox, one of the main European logistics investors in the real estate sector, Portugal (24%), is in the top 5 European countries most popular markets for occupiers to increase their warehouse footprint, just behind France (44%), Germany (43%), Spain (39%) and Italy (26%). But it is also in investment intentions that Portugal scores. France, Germany, Spain and Portugal also topped among the desired investment locations, although Italy ranked relatively lower.



ONLINE POPULATION VS ONLINE BUYERS



Source: Forrester

LISBON

INVESTMENT MARKET

INDUSTRIAL & LOGISTICS

In 2021, the national real estate investment market registered a total investment volume of 2 billion euros, a decrease of 28% and 34% compared to 2020 and 2019, respectively.



TOTAL I&L INVESTMENT VOLUME

(YEAR 2021)
41 M€ (-34% yoy)

PRIME YIELD (%)
5.50% (-50% bps yoy)

TOP INVESTMENT DEALS

M7 I&L PORTFOLIO

- Various locations
- Q3 2019
- GLA: 75,232 sq m
- Seller: Imofundos
- Buyer: M7 Real Estate
- Investment value: 27M€

GREENYARD RIACHOS

- Torres Novas, Valongo
- Q3 2020
- GLA: 16,600 sq m
- Seller: TN Parque
- Buyer: Square Asset Management
- Investment value: 15M€

IBERIA PORTFOLIO

- Various locations
- Q4 2020
- GLA: 85,000 sq m
- Seller: Incus
- Buyer: M7 Real Estate
- Investment value: 41 M€

ADARSE+CARTAXO

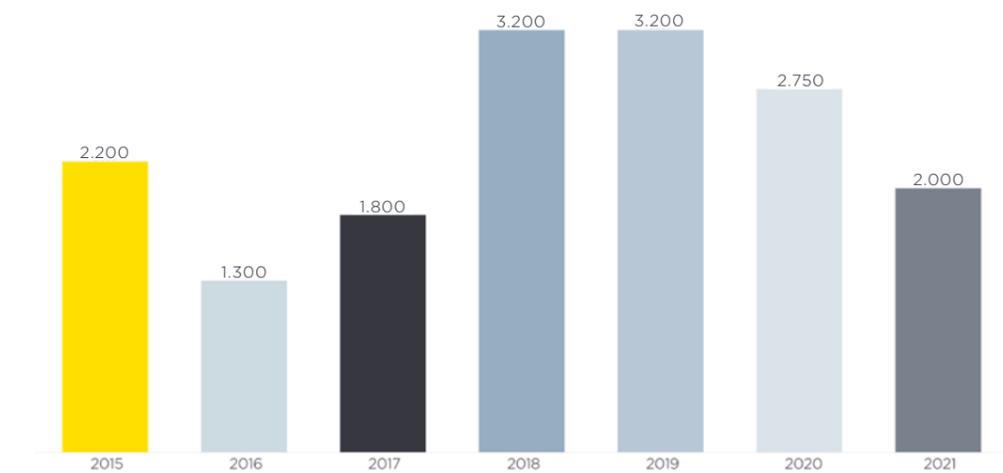
- Q4 2021
- GLA: 35,300 sq m
- Seller: Fundo Ibéria
- Buyer: Bedrock | Europi Property Group
- Investment value: 14.5 M€

As far as the national Industrial&Logistics real estate sector is concerned, in the year 2021 it registered historic increases in the take-up volume of 83% and 102% compared to 2020 and 2019, respectively, surpassing the 500,000 sq m mark. The Alverca-Azambuja axis, in the Lisbon Metropolitan Area, was the driving force behind this growth, representing 47% of the I&L market. The logistics market in the Lisbon Metropolitan Area closed the year with an estimated logistics stock of 2.5 million sq m and a vacancy rate of 5%.

The I&L market fundamentals are expected to remain strong in 2022, as operators continue their expansion plans in search of greater storage space, largely due to the growth of e-commerce. Nearshoring and the need to increase stock are also strong contributing factors to increased demand. However, the evolution of investment volumes has been held back by a very scarce supply of quality assets, which has been disproportionate to the interest shown by investors in this segment.

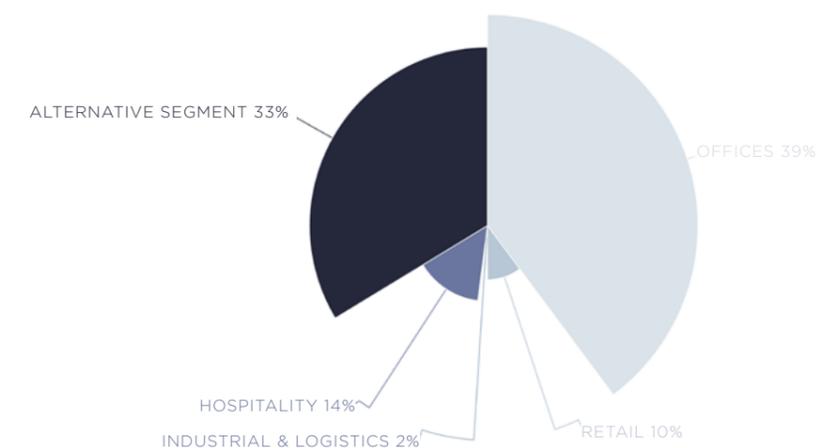
In the last 5 years 33 deals have been registered with a volume of more than 1 million sqm transacted for a total of 686 million euros. The largest transaction recorded was closed in 2017, when the Logicor Portfolio (16 assets) was sold for €260 million to China Investment Corporation. Cross-border investment accounts for 80% of the total investment volume, with countries such as China, USA, UK, Germany and Spain leading the table. The Prime Zone, Alverca-Carregado - Azambuja, has an investment volume of over 100 million euros between 2017-2021.

EVOLUTION OF REAL ESTATE INVESTMENT VOLUMES (MILLION €)



Source: Savills

DISTRIBUTION OF ANNUAL INVESTMENT VOLUME BY SEGMENT (YEAR 2021)



Source: Savills

LISBON METROPOLITAN AREA

I&L MAP

6 ZONES

STOCK

- 2.5 Million Sq m

AVAILABLE SUPPLY

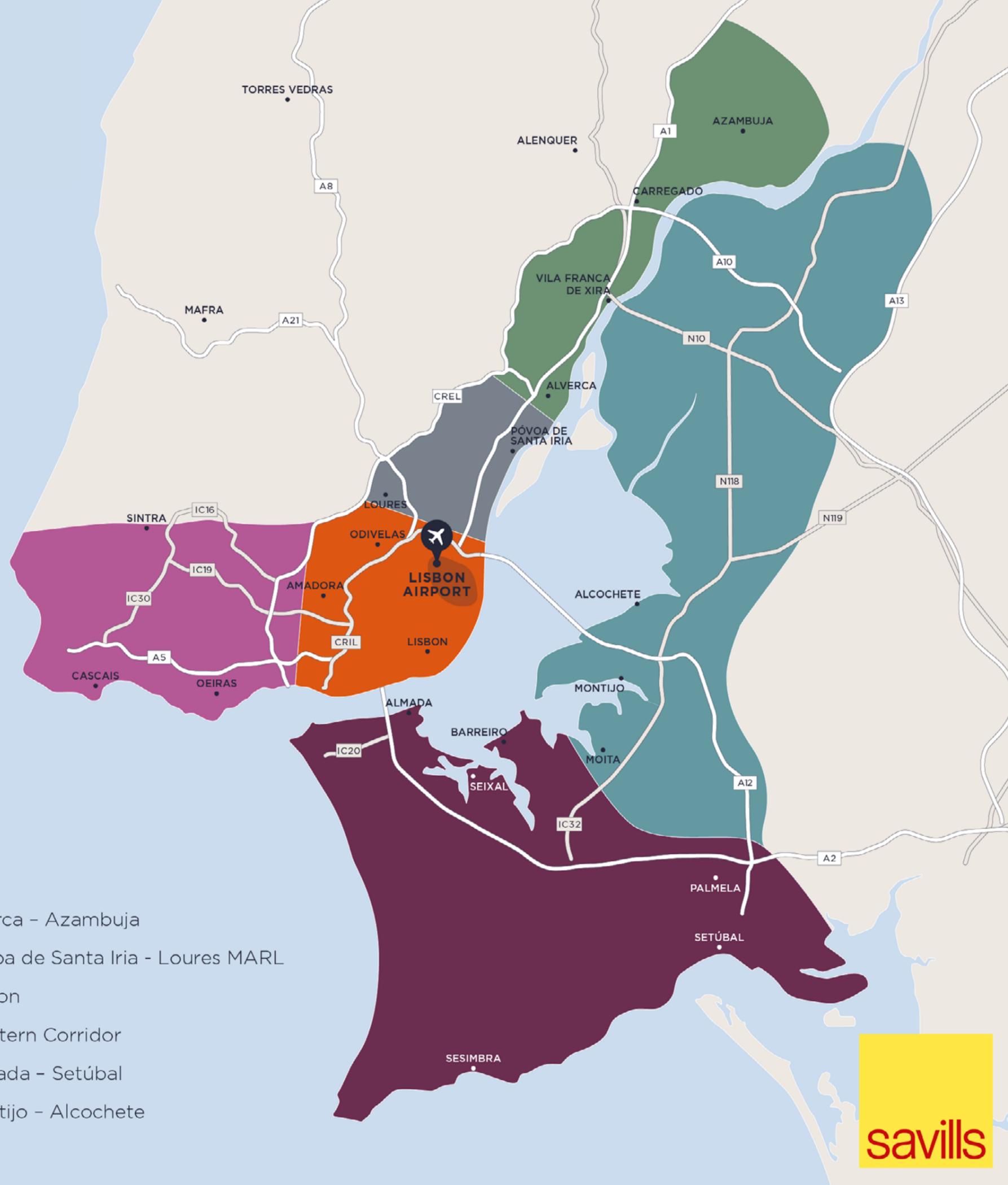
- Approx. 133,000 sq m

VACANCY RATE

- 5%

DEMAND AREA

- Approx. 354,000 sq m

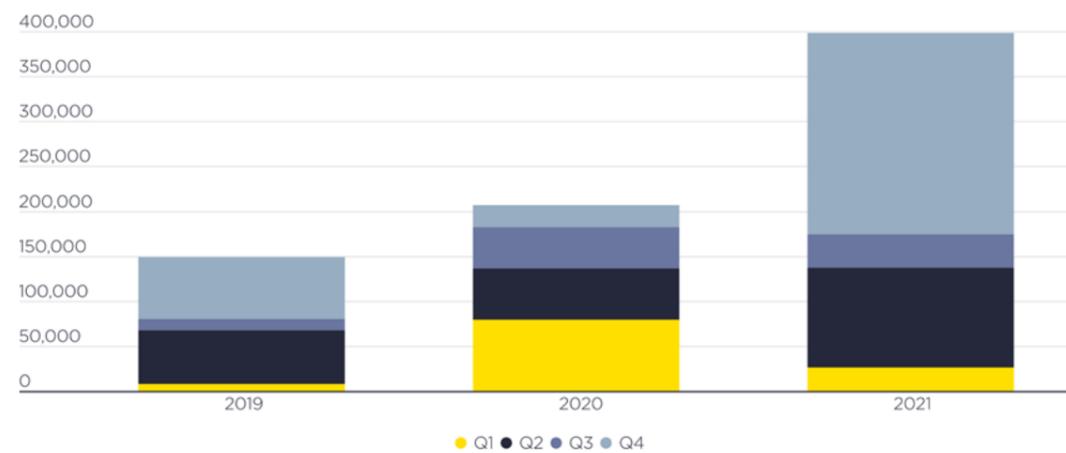


- Zone 1 - Alverca - Azambuja
- Zone 2 - Póvoa de Santa Iria - Loures MARL
- Zone 3 - Lisbon
- Zone 4 - Western Corridor
- Zone 5 - Almada - Setúbal
- Zone 6 - Montijo - Alcochete

Disclaimer: The stock volume and available supply key-numbers presented in this report is sourced from Savills' internal database, from which a careful selection was made of logistics warehouses with areas above 2,000 sq m and which meet the minimum quality requirements for viable occupation.

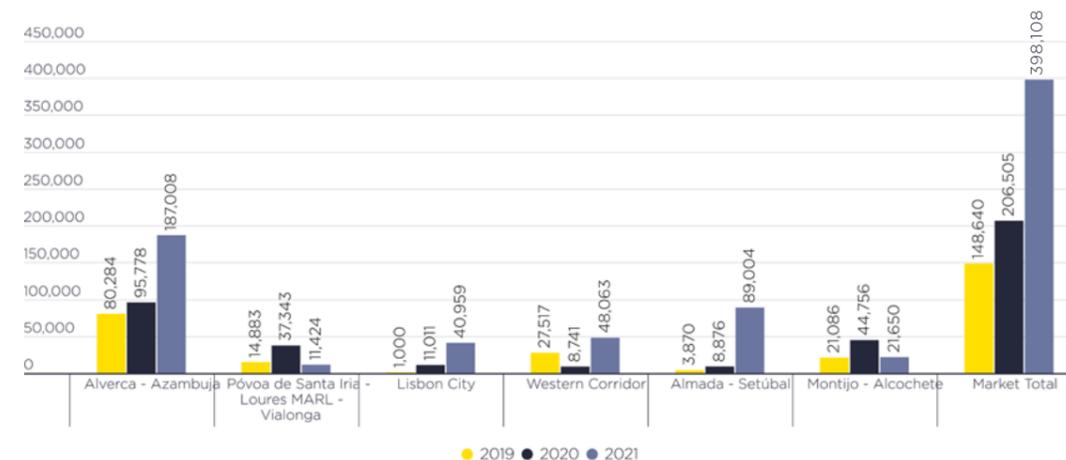
LISBON METROPOLITAN AREA I&L MARKET

EVOLUTION OF INDUSTRIAL & LOGISTICS TAKE-UP - LISBON METROPOLITAN AREA



Source: Savills

EVOLUTION OF OF INDUSTRIAL & LOGISTICS TAKE-UP BY MARKET ZONE



Source: Savills

The lack of quality supply combined with strong market potential has been sharpening investors' interest in I&L projects development, setting new quality and innovation standards in the coming years and contributing to a

new industrial & logistics scenario in Portugal, able to compete with other European markets.

In recent decades, faced with an inadequate supply of available space, the market has developed on the back of projects and investments for owner occupiers, as the fastest and most viable solution for its location and activity expansion needs.

Lisbon Industrial & Logistics market has gathered the most interest from occupiers and investors, supported by a very advantageous strategic location, provided with a complete network of infrastructure and transports such as an international airport, a seaport with boarding capacity for large ships, a railway system with international connections and highways that connect north to south of the country and with connection to Spain.



Divided into six distinct industrial & logistics axes, with different features that help to target their occupational profile, the market has seen a gradual and consistent increase in take-up volumes.

In the accumulated take-up volume since the year 2019, the market exceeded 750,000 sq m, with the year 2021 accounting for an increase of 168% compared to 2019 and the axis Alverca-Azambuja holding a 52% market share.

The Alverca-Azambuja market axes count for 300,000 sq m of new supply. The largest project is the Plataforma Logística Lisboa Norte with 225,000 sq m when all the phases have been concluded. The first phase with 45,000 sqm is already completed. The project consists of six units with areas ranging from 6,500 sq m to 9,500 sq m, with a 12m of high ceiling.

Also Aquila Capital is developing a 115,000 sq m highly modern and sustainable logistics platform.

Póvoa de Santa Iria, Loures MARL and Vialong axes will add three new projects to the current supply, in a total of 70,765 sq m. VGP, an operator with several projects spread in the country, is also developing two projects in Loures and Sintra, with a total of approximately 31,000 sq m.

The Western Corridor, in addition to the VGP project, also counts with two more projects, which will add 29,000 sq m to the stock of zone 4.

For the market zones of the South Bank of the Lisbon Metropolitan Areas, there is only one project in the pipeline, with 33,000 sq m located in montijo, zone 5.



MARKET TOTAL
440,000 SQ M



ZONE 1
300,000 SQ M



ZONE 2
70,675 SQ M



ZONE 4
40,000 SQ M



ZONE 5
33,000 SQ M

TOP 5 DEALS DONE 2021

GREEN LOGISTICS

- Tenant: Confidential
- GLA: 80,500 sq m

LISGRÁFICA

- Tenant: Confidential
- GLA: 42,000 sq m

INDUSTRIAL WAREHOUSE IN ZONE 5

- Tenant: ETERMAR
- GLA: 37,500 sq m

STEF PLATFORM

- Tenant: STEF
- GLA: 30,000 sq m

INDUSTRIAL WAREHOUSE VALE TRIPEIRO - BENAVENTE

- Tenant: Fusion Fuel
- GLA: 14,333 sq m

LOGISTICS PLATFORM LISBON NORTH

- Tenant: Rangel
- GLA: 13,112 sq m

KEY-TRENDS:

- Strong market fundamentals;
- Increased expansion operations, with high demand for logistics facilities suitable for last-mile and cross-docking operations;
- Ecommerce, with high growth rates expected for the coming years, will continue to add a greater need for sq m to the entire supply chain;
- Major deals of 2022 will be pre-let. There is a vast pipeline that will not be delivered until 2023. Due to lack of supply, the trend of built to suite will remain;
- Demand continues to be predominantly warehousing logistics to support the growth of 3PL's;
- Demand for industrial units is beginning to gain visibility with more companies active in the market looking for units for this purpose;
- The prime zones continue to be preferred by 3PL's and retailers, however, as a result of the need for operations close to consumption and with greater distribution intensity, there is a more decentralized growth in demand for the prime axis, moving to zones closer to the consumer;
- The emergence of a new product will cause rents to rise substantially, especially in areas of higher demand;
- Prime yield compression;
- Main operators are beginning to demand assets that are in line with ESG policies. Promoters are also beginning to pay more attention to asset development following this trend.



LISBON

INDUSTRIAL & LOGISTICS

KNOW THE ZONES

ZONE 1 ALVERCA - CARREGADO - AZAMBUJA

Zone 1, considered the prime zone for the industrial and logistics market in the Lisbon Metropolitan Area, includes as its main axes Alverca, Vila Nova da Rainha, Carregado and Póvoa de Santa Iria.

The Vila Nova da Rainha hub is the most important logistics hub, strongly leveraged by two major projects undertaken by Aquila (115,000 sq m) and Merlin Properties with the project Plataforma Logística Lisboa Norte, which awaits completion of 185,000 sq m, having already completed 45,000 sq m of the first phase of the project.

This logistics hub benefits from good access, close to the A1 and N10 motorways, allowing fast connections to the North and South of the country and also to Spain.

DEMAND PROFILE

Currently there is an active demand for about 65,000 sq m, with an average area of 7,000 sq m. Most of the demand comes from the logistics sector, looking for high quality big boxes with loading dock and a height ceiling between 10 to 12 meters.

KEY NUMBERS

- Stock: 1,130,379 sq m
- Available supply: 27,836 sq m
- Vacancy rate: 2%
- Pipeline: 300,000 sq m
- N° Deals Done (2019-2021): 34
- Average Deal Size (2019-2021): 10,308 sq m
- Take-up (2019-2021): 288,611 sq m
- Prime rent (€/sq m/month): 4,00€/sq m/month

MAIN BUSINESS SECTORS

- Distribution & Logistics : 58%
- Food Retailer: 11%

ZONE 2 PÓVOA DE SANTA IRIA - LOURES - MARL - VIALONGA

With a strong industrial character, Zone 2 benefits from a privileged connection to the Vasco da Gama bridge and greater proximity to the capital. Populated by Manufacturing Units and Warehouses, it has also become a much sought after location for the installation of logistics centres.

This is where MARL, the Lisbon Region Supplier Market is located, which is the biggest logistics hub, with a pivotal weight in the affirmation of this area as a logistics hub, attracting new companies, particularly distribution and transport companies.

DEMAND PROFILE

This market axis has the highest volume of active searches in the Lisbon Metropolitan Area, with more than 140,000 sq m and an average area of 5,000 sq m.

It is also much sought after by operators who prefer smaller areas that are geared towards last-mile logistics operations.

KEY NUMBERS

- Stock: 323,642 sq m
- No available supply
- Vacancy rate: 0%
- Pipeline: 65,000 sq m
- N° Deals Done (2019-2021): 6
- Average Deal Size (2019-2021): 3,055 sq m
- Take-up (2019-2021): 18,328 sq m
- Prime rent (€/sq m/month): 4,25€/sq m/month

MAIN BUSINESS SECTORS

- Distribution & Logistics : 61%
- Food Retailer: 18%

ZONE 3 LISBON

The Lisbon logistics hub has its own particular characteristics. Due to the proximity to Humberto Delgado airport, the parish of Prior Velho is the most recurrent area for the occupation of mainly last mile logistical units. This is one of the few areas that can meet almost all of the criteria for the implementation of this type of asset. With e-commerce growth, it is expected that in the long run the Prior Velho will become a retail chain, populated with mix use schemes of logistics and retail.

Also the proximity to Lisbon has driven investor interest, who often prefer to give way to residential, office or retail developments. Not discolouring the development of industrial & logistics in this market axis, where there are prestigious tenants such as DHL, FedEx or UPS Portugal, we also can find rent car companies and hotel units.

This market area also extends to Alfragide and Carnaxide, on the outskirts of Lisbon, but still offering proximity to the city centre and quick access to the north and south of the country.

DEMAND PROFILE

The demand profile for Lisbon axis is divided into two zones: the zone next to the airport and Alfragide-Carnaxide zone. The area next to the airport is featured as being more appropriate for last-mile distribution companies.

Traditional warehouses between 1,000 sq m and 2,000 sq m with parking lots and loading docks for sprinters are the main demand requirements.

Regarding the Alfragide-Carnaxide area, the demand profile is more suitable for companies dedicated to crossdocking, with traditional warehouses and logistics space with loading dock. There is also visible demand for commercial galleries with storage spaces.

KEY NUMBERS

- Stock: 47,555 sq m
- Available supply: 4,125 sq m
- Vacancy rate: 9%
- Pipeline: 0
- N° Deals Done (2019-2021): 16
- Average Deal Size (2019-2021): 3,902 sq m
- Take-up (2019-2021): 62,439 sq m
- Prime rent (€/sq m/month): 6,00€/sq m/month

MAIN BUSINESS SECTORS

- Distribution & Logistics : 26%
- Electronics: 20%

KNOW THE ZONES

LISBON

INDUSTRIAL & LOGISTICS

KNOW THE ZONES

ZONE 4 WESTERN CORRIDOR

The Western Corridor axis, corresponding to zone 6, develops along the A37/IC19. On the outskirts of Lisbon it counts with the presence of industrial and technological business parks and storage units of average quality. Retail stand alones and car dealerships are also recurrent.

The main logistics hub of the Western Corridor is located in Abrunheira, where Sintra Business Park and Abrunheira Park are located. It is the location of choice for pharmaceutical and healthcare companies, food industry and consumer products.

DEMAND PROFILE

Lisbon's market zone 6 has as its main latent demand crossdocking warehouses with areas between 1,000 sq m and 2,000 sq m.

Tenants look in addition to warehouses, logistics spaces with loading docks for sprinters vans to start distribution routes.

KEY NUMBERS

- Stock: 414,761 sq m
- Available supply: 17,026 sq m
- Vacancy rate: 4%
- Pipeline: 42,000 sq m
- N° Deals Done (2019-2021): 17
- Average Deal Size (2019-2021): 1,980 sq m
- Take-up (2019-2021): 33,659 sq m
- Prime rent (€/sq m/month): 5,50€/sq m/month

MAIN BUSINESS SECTORS

- Others : 61%
- Services Provider: 14%
- Industry & Manufacturing: 11%

ZONE 5 ALMADA - SETÚBAL

The Almada - Setúbal axis is located on the south bank and is composed along the A2, the Southern motorway. Over the years, the development of excellent accessibility, competitive prices, as well as the proximity to the Port of Setúbal and the south of the country, have been making this axis with market expressiveness.

The industrial zone of Quinta do Anjo was the one that had a greater development with the establishment of Autoeuropa, as a kick-start to the expansion of this industrial axis.

Further south, there are some hubs more connected to the manufacturing industry, such as SAPEC Bay, located in the Mitrena Industrial Zone. SAPEC Bay has an area of approximately 400 ha, where the main players are The Navigator Company, Lisnave and Inapa.

This industrial zone ensures the provision of various services, including global logistics, storage, security services and surveillance of installations. Zone 6 still has enormous potential for expansion, on flat land with large areas.

DEMAND PROFILE

The demand profile of zone 6 is very similar to the Montijo-Alcochete axis, with a very active latent demand for ships between 2,000 and 5,000 for logistics and distribution operators, with height ceiling requirements between 10 and 12 meters, with discharge docks.

KEY NUMBERS

- Stock: 474,007 sq m
- Available supply: 71,269 sq m
- Vacancy rate: 15%
- Pipeline: 0
- N° Deals Done (2019-2021): 18
- Average Deal Size (2019-2021): 5,091 sq m
- Take-up (2019-2021): 91,647 sq m
- Prime rent (€/sq m/month): 3,20€/sq m/month

MAIN BUSINESS SECTORS

- Distribution & Logistics: 53%
- Industry & Manufacturing: 24%
- Other retailers: 7%

ZONE 6 MONTIJO-ALCOCHETE

Zone 6, located on the south bank of Lisbon, has as its main characteristic its proximity to the Vasco da Gama Bridge, which was one of the main reasons for the consolidation of the Montijo - Alcochete axis. In addition to the Vasco da Gama Bridge, speculation for the construction of Montijo Airport also had an important impact on this axis, even with logistics centres, still with a lot of expansion potential.

In addition, it is also expected that the prime income will rise in the coming years, if the airport is even coming through.

Regarding the type of assets present in zone 6, the characteristics of the spaces are of above average quality, since they were built relatively recently.

Most larger spaces are occupied by companies dedicated to logistics, however, there are also food distribution chains such as Jerónimo Martins, El Corte Inglés and ALDI.

This axis has been suffering from a great shortage of available spaces that meet the minimum requirements of installed automation, which can be an advantage in the investor's view since this zone has professional operators that give prestige and attract more tenants to this zone.

DEMAND PROFILE

The demand profile for this axis is characterized by areas between 2,000 and 5,000 sqm, where the height ceiling between 10-12 m is a very appreciated factor, as well as loading docks for logistics and distribution companies, which are the ones that most seek this axis.

KEY NUMBERS

- Stock: 183,733 sq m
- Available supply: 15,000 sq m
- Vacancy rate: 8%
- Pipeline: 33,000 sq m
- N° Deals Done (2019-2021): 10
- Average Deal Size (2019-2021): 3,440 sq m
- Take-up (2019-2021): 34,396 sq m
- Prime rent (€/sq m/month): 3,50€/sq m/month

MAIN BUSINESS SECTORS

- Industry & Manufacturing: 43%
- Other Retailers: 28%
- Pharmaceuticals & Health: 11%

KNOW THE ZONES

" TAKE-UP LEVELS THAT GROW YEAR ON YEAR, A NEW PIPELINE ON THE HORIZON, REORGANIZATION OF LOGISTICS OPERATIONS AND THE ENTRY OF NEW PLAYERS INTO THE MARKET ARE REVIVING A DORMANT SECTOR IN PORTUGAL, WHICH WAS IN NEED OF A BOOST. THE PANDEMIC BROUGHT THIS BOOST, PUTTING DISTRIBUTION CHAINS TO THE TEST, REQUIRING THE APPLICATION OF NEW METHODS AND TECHNOLOGIES TO STREAMLINE LOGISTICS PROCESSES, WHICH NOWADAYS MUST NECESSARILY CULMINATE IN SHORTER DELIVERY TIMES. "

The Savills logo consists of the word "savills" in a white, lowercase, sans-serif font, positioned within a solid black square.