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01. Introduction & context

Madrid 360 Environmental Sustainability Strategy

In **2019**, Madrid City Council designed and launched the **Madrid 360 Environmental Sustainability Strategy**. An **alive strategy**, that has evolved to account for new demands from its citizens and that as of today in encompasses more than **200 initiatives**.



- In 2019, the Madrid 360 Environmental Sustainability Strategy is designed and launched
- Madrid 360 is an alive strategy, that encompasses more than 200 initiatives
- The **Strategy has evolved** to account for the new demands from its citizens

Madrid 360 transforming vectors



City

It has as an objective, among others, to increase energy efficiency and support electrification, improve infrastructure management and promote the development of green areas.



Mobility

This vector leads to the promotion of micromobility, public transport optimisation or the increase of the number of environmentally friendly vehicles in the city.



Administration

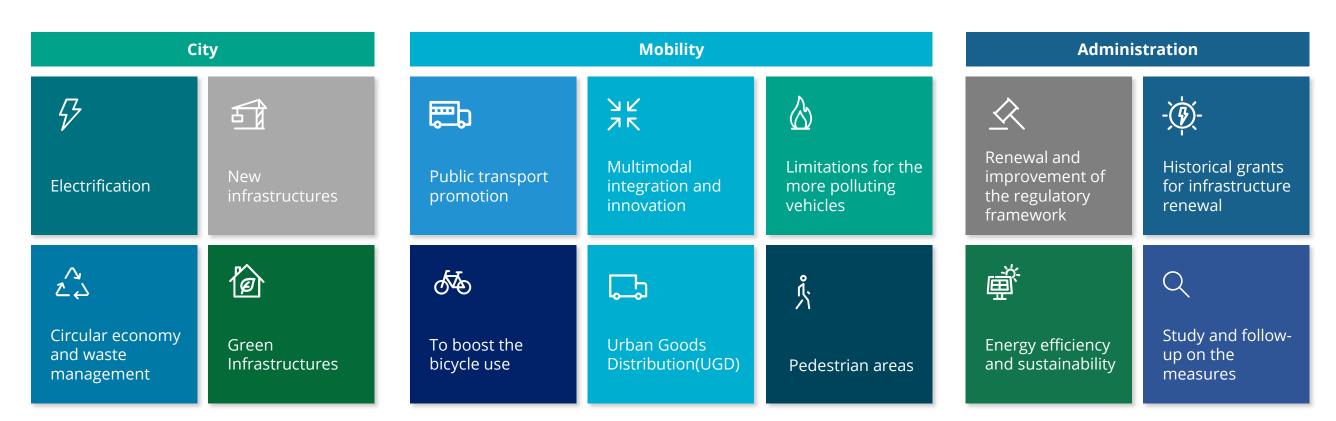
The aim is to transform the administration in an example and leader in sustainability, by adapting the regulatory framework to facilitate the Strategy implementation.

01. Introduction & context

Madrid 360 Environmental Sustainability Strategy

The three Madrid 360 transformation vectors (City, Mobility and Administration) aim to transform Madrid into a more sustainable from the environmental, social, land and economic points of view. Those vectors are developed within the following strategic scopes.

Madrid 360 Strategy vectors



01. Introduction & context

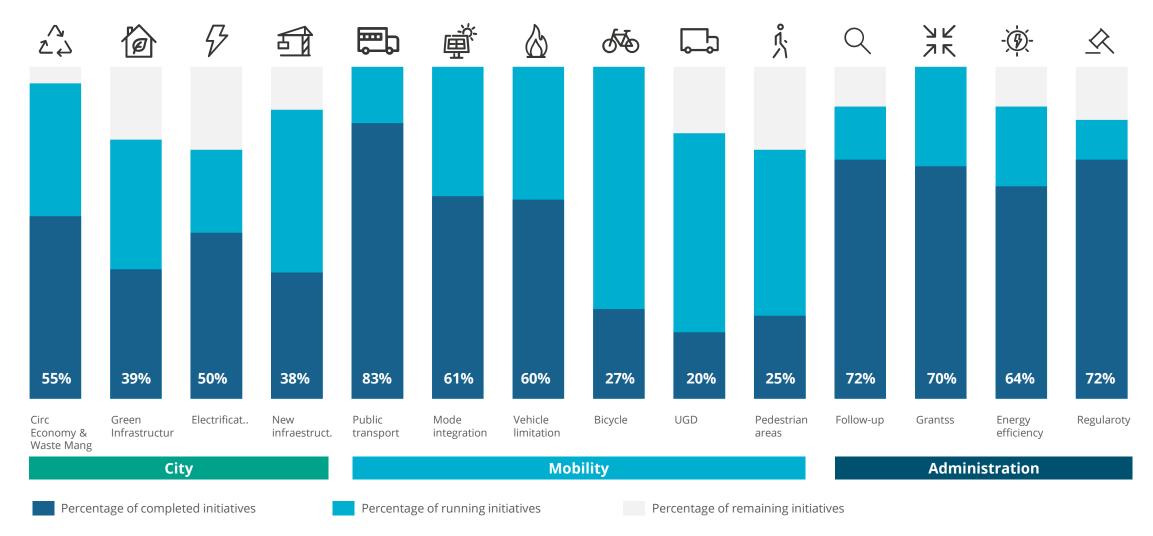
Madrid 360 Environmental Sustainability Strategy

Description of the 14 vectors of the strategy









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Main implemented actions: Renewal and improvement of the regulatory framework

It has been necessary to develop a new and exhaustive regulatory framework which could hold all the initiatives launched withing the Madrid 360 Strategy.

City Council ordinances of this term



Air Quality and Sustainability Municipal Ordinance

In force since March 2021



In force since June 2021



Sustainable Mobility Municipal Ordinance

In force since September 2021



Public Spaces Cleaning and Waste Management Municipal Ordinance

In force since December 2022

Road map for Climate Neutrality

In force since March 2021



Mission City of European Commission

In force since April 2022



Other relevant documents

Sustainable Mobility Plan 360

In force since July 2022



Urban distribution of Goods Strategy

In force since October 2022



Especial Noise Protection Zone Trafalgar-Ríos Rosas

In force since November 2022



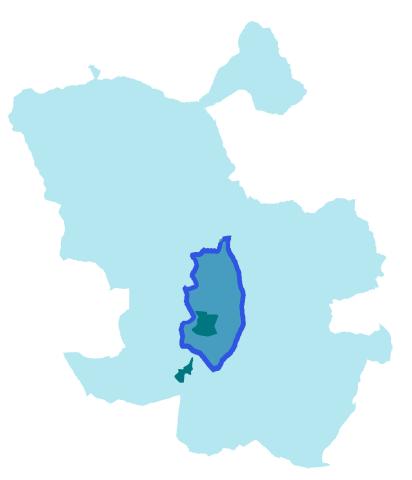
Main implemented actions: Limitations for the more polluting vehicles

The September 2021 Sustainability Municipal Ordinance stablished the regulatory framework so the whole city could become a **Low Emissions Zone** (LEZ) and created the basis for the development of two **especial protection LEZ** in the **Central District** and **Plaza Elíptica**



Madrid Low Emissions Zones (LEZ)

- From the 1st of January 2022: The "A" vehicles registered outside Madrid cannot circulate within the boundaries of the M-30
- From the 1st of January 2023: The "A" vehicles registered outside Madrid cannot circulate on the M-30
- From the 1st of January 2024: The "A" vehicles registered outside Madrid cannot circulate within the city boundaries.
- From the 1st of January 2025: All "A" vehicles cannot circulate within the city boundaries
- In Madrid LEZ, the unauthorised accesses have been reduced by **59,4 % from the prewarning period.**





Especial Protection Low Emissions Zones (EPLEZ)

Central District Especial Protection Low Emissions Zones (EPLEZ): In force since September 2021

The unauthorised accesses to the Central District EPLEZ have been reduced by **40,6 %** from the prewarning period.

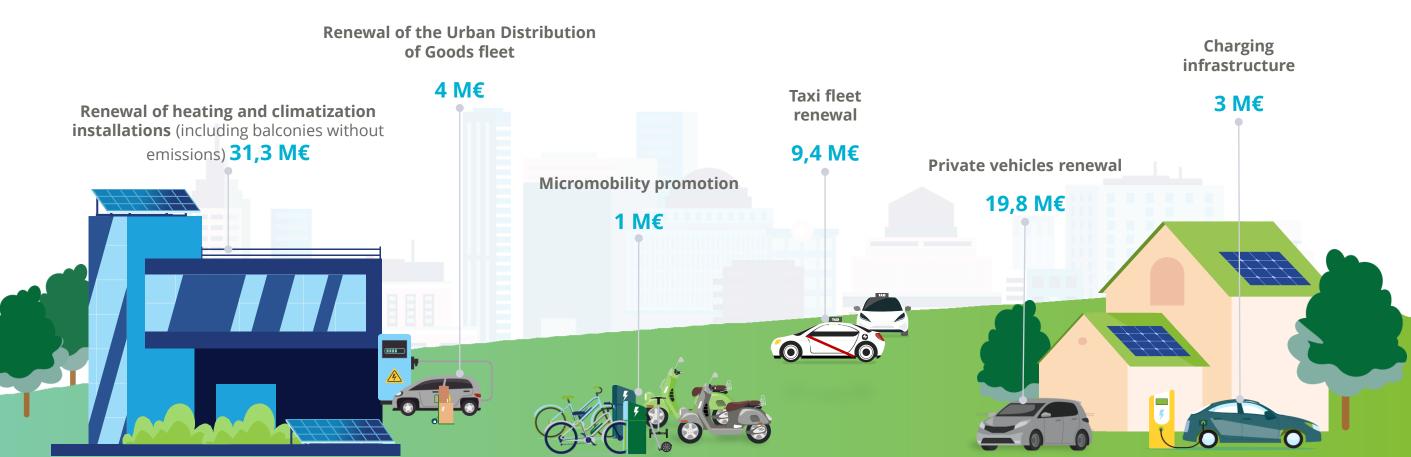
Plaze Elíptica Especial Protection Low Emissions Zones (EPLEZ): In force since December 2021

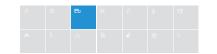
The unauthorised accesses to the Plaza Elíptica EPLEZ have been reduced by **66,5 %** from the prewarning period.

Main implemented actions: Historical Grants for Energy Transition

Through the Strategic Grants Plan, the Madrid City Council wants to offer 111,5 millions of euros from 2020 to 2023 by Ayudas Cambia 360. This Plan divides the grants in two main lines: One to encourage sustainable mobility and another one for urban regeneration and energy efficiency.

Until now, a total of 68,5 M€ in grants have been offered within the Madrid 360 scope





Main implemented actions: Public transport promotion

In its decisive promotion of the public transport, the Madrid City Council has approved a Strategic plan for the **Municipal transport Company (EMT)** that includes:

+1.000M€ investment

534 M€ for fleet renewal and 290 M€ for the construction of sustainable infrastrutures

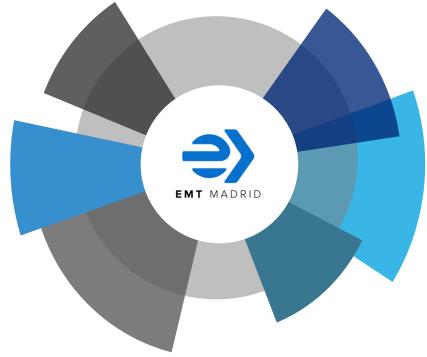


New Infrastructures

New Operation Centre **La Elipa**, New Operation Centre **Las Tablas**, **OC Carabanchel**

Electromobility Hub Canalejas 360:

Hub in the city centre with 12 charging points and mobility services such as carsharing, electric motosharing, BiciPARK, etc.





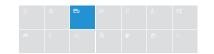
Innovation and digitalization

App Madrid Mobility 360: Allows for route calculation, tickets adquisition and public transport occupancy.

Full Redesign of the buses

Counting and security technology

Card payments in the whole net.



Main implemented actions: Public transport promotion

Further to the strategic plan and the fleet renewal, the EMT is developing new routes, new bus exclusive lanes and initiatives to cater for the citizens demand and promote public transport.



New routes

Development of 8 new routes, among which 3 zero routes (3 zero emissions routes, 2 of which are free)



New bus exclusive lanes

+66 km

An increase of over 50% since 2019





EMT free rides

36 "free days" on the EMT buses +30,7 million passengers in free zero routes and the free bus days



Demand recovery

+99,5%

Demand recovery* (working days)

1,57 million passengers

On the 22nd of November 2022 (Black Friday): was the all-time record on the EMT since the start of the pandemic.

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Main implemented actions: EMT sustainability

With the decommissioning of the last diesel bus, Madrid becomes the **first European big city** with a **100 % environmental friendly** bus fleet In 2025, 25% of the EMT fleet will be electric and in 2027 at least a third of the city council buses.



Madrid has **19 100 % electric routes**, which makes the capital city **the Spanish city with more electric routes** and **the second in Europe, after Berlin.**



The EMT has **reduced by 45% the NOx emissions** 139,789 kg in 2021 against 76,352 kg in 2022



The EMT invests 10,8 M€ in a **hydrogen factory**, and adds **ten buses propelled by green hydrogen.**



From the beginning of the political term, the EMT has bought **1.291 buses**, what means a **62%** renewal of the fleet.

EMT electric fleet evolution

2022	2025	2027
8,6%	25%	35%
Of the buses are electric (Dec 2022)	Of the buses will be electric	Of the buses will be electric

02. Balance de la Estrategia de Sostenibilidad Ambiental Madrid 360



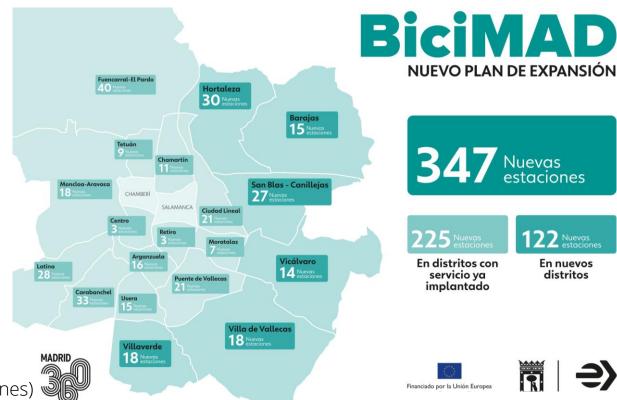
Main implemented actions: BiciMAD expansion

Between 2019 and 2020, BiciMAD had a historical expansion with 90 new stations. The **new expansion project launched in 2022 aims to reach all** districts by 2023, duplicating the existing system to reach **611 stations and 7,500 vehicles**.

districts (+6 new: reaches all districts)

stations (+347 new: more than doubling the existing ones)

500 bicycles (+4.536 new: more than doubling the existing ones)



Main implemented actions: Bicycle promotion and other PMV

The conscious promotion of the bicycle and other Personal Mobility Vehicles (PMV) by the city council has seen the biggest expancion of the **BiciMAD** service in its history, reaching all districts and the development and promotion of infrastructures such as bicycle lanes and parking spots fro these vehicles.

6.000

Scooter authorisations

New model tidier, safer and integrated: 3 companies

71 km
More of bicycle lanes

13 km

Castellana bicycle lane

5 M€ for the first part with 4.25 km, expected in March 2023

24,342

Municipal parking spots for bicycles + PMV + Motorbikes

Regulations

Sustainable Mobility Ordinance

The new ordinance cover the bicycle, PMV and motorcycle parking, enhancing road safety in Madrid.







Main implemented actions: Pedestrian areas

One of the most singled out measures included in in the Madrid 360 Strategy has been development of pedestrian only areas in the 21 city districts to turn 170,000 square metres in zero emissions zones. The **Puerta del Sol and its surroundings** were the first of this pedestrian areas.

Puerta del Sol pedestrian only area

16.751 square metres for pedestrians

The principal **vectors of the refurbishment** have been:

Elimination of almost **7.000 daily trips** in private vehicle

New signage specific, vertical and on the road.





Main implemented actions: Urban Distribution of Goods (UDG)

The City Council has implemented the first strategy for the **Urban Distribution od Goods (UDG) 360**. The strategy comprises ten measures to promote a more **efficient and sustainable logistics model** that allows a **greater agility** for the operators.

- 1 The development of an App to know in real time the occupancy levels of the cargo areas.
- 2 The installation of **reservation sensors** to obtain better usage information.
- The increase in the **number of cargo areas** for the distribution of goods.
- 4 The **extension** of the cargo operations schedule
- **S** New signage implementation.

- The formation of a **new incident management team** to support the industry and control the correct functioning of the system.
- The **enhancement of micro-hubs** by public and private collaboration and the promotion of night time distribution of goods.
- The installation of new lockers for e-commerce.
- 9 The promotion of an environmentally friendly transition of the UDG vehicles.
- 10 The creation of an UDG forum to implement further initiatives coming from stakeholders engagement.



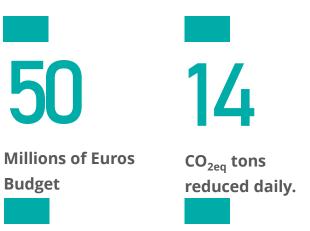
The new **App DUM Madrid 360** has been launched as a key measure of the strategy. It is exclusively developed for **professional users**, it **digitalises** the whole delivery system and **automatizes** the usage control of the cargo bays. The App has three objectives: **Optimise de usage** of the reservations, allowing a greater availability of them, **reduce pollution** by reducing unnecessary lengthen trips and **put an end** to parking breaches.

Main implemented actions: New Infrastructure

The **M-30 Nudo Norte** improvement works, one of the most congested spots of the city, is one of key measures to reduce emissions. The development allows for a daily reduction of $14 CO_{2eq}$ tons.



Nudo Norte





Plaza de España

Includes pedestrianisation of the axis Bailén-Ferraz, planting over **1,100 new trees** and implementation of three kilometres of cycling lanes.

Mahou-Calderón

The completion of the covering of the M-30 (Mahou-Calderón area), will allow the environmental, pedestrian and landscape continuity of the Madrid Río park, finalising one of the most important urban transformation within the city of the century.

Bus Rapid

New infrastructure. A bus-only lane with priority at the traffic lights of 30.9 km that will connect Valdebebas and Sanchinarro with the Ramón y Cajal Hospital.



19

Main implemented actions: Regulated parking service (SER)

Aiming to improve the air quality, the City Council has expanded the SER and implemented new fees that vary with the air quality within the city.



01/ EXTENSION **OF SER ZONE**









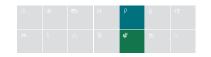
02/ SER DYNAMIC TARIFFICATION

- Implementation of the SER dynamic tariff in January 2022
- The fee gets incremented by 60 % up to a 100 % in proportion to the NO_x emission levels and a 100 % when the **Protocol for Pollution Episodes** is activated.



ROTATION SPACES

- Implementation of the first 491 high rotation slots in February 2022
- The objective is to **reduce the traffic that happens while looking for a parking spot**, by reducing the allowable parking time to 45 minutes.



Main implemented actions: Electrification and energy efficiency

The city council, with the Madrid 360 objectives, promotes solar power and energy self-consumption as a key measure to facilitate the transition to more efficient climatization systems and zero emissions.



x3 fast charging points 284 public access

in public access spaces since 2019

points: 100 fast charging and 184 slow charging

Regulatory drive*: Charging stations in non residential buildings, Solar power systems in new construction.



+27% growth of **energy** produced in municipal buildings with **solar power installations** from 2019, with a **19%** output increase

Madrid 360 Solar, initiative to promote energy self-consumption and solar power installations.

50% council tax **bonification** for 3 years for buildings which install solar power systems.

95% ICIO deduction if a self-consumption system is installed.

Note: buildings for non-residential use with parking with more than 20 spaces, must install at least one charging station for every 40 parking spaces; new buildings must allocate at least an area equivalent to 50% of the occupation of the plot for the installation of solar energy systems preferably located on the roof.



Main implemented actions: Waste management and cleaning

Madrid City Council has made an **historical investment** to improve the cleanliness of the city. The budget of the **new cleaning and waste collection** contracts exceeds in over 200 million Euros previous contracts.





Madrid **Public spaces cleaning** service contract

15% Increase budget from former 2 000 More workers on the streets 16% mechanical means

Preservation, maintenance and cleaning of green areas and trees on the streets.

Maintenance and cleaning of bins from the city cleaning services.

collection and transport of 1.500 millions of Euros waste

Collection frequency increase

SELUR Management

Graffiti cleaning

Cleaning and preservation of areas between buildings

New contract for 14 districts

Holistic maintenance of parks and nurseries

70 % more workers



Main implemented actions: Circular economy and waste management

The city council promotes a circular economy and a proper waste management, as reflected in its efforts to improve and expand the capacity of the **Parque Tecnológico de Valdemingómez**, which in 2022 had a **123,55 M€ budget**.

Expansion of the **Biomethane treatment plant** (PTB), with a increase of

Equivalent to the gas needed to power 750 buses or 20.000 homes.

Implementation of **organic waste** collection and construction of a new plant for the treatment of this waste, with an investment of

42 Eand a total compost management capacity of 100.000 tons.

Use of the biomethane generated in the Parque Tecnológico Valdemingómez in one of the CNG routes of the EMT. Launch of 'ValdeInnova Biomethane', to reduce the green house gases (CO₂) produced in the La Paloma Plant.



Main implemented actions: trees and green areas

Madrid is one the cities with more trees in the world. Within our commitment with the environment and the green heritage, the City Council has undergone the biggest tree planting campaign of its history and has an annual budget of 218 M€ for the cleaning and preservation of parks and other green areas.



3.800

Parks and green areas in the city



1,74

Million trees upkept by city council



54%

Of the streets of the city have trees



3ei

Consecutive year being awarded the 'Ciudad arbórea del mundo'

01/ GREEN HERITAGE RECOVERY PLAN



100.000

Planted trees to recover those affected by the "Filomena" storm



61.000

Units to be planted within the wasteland recovery



11.216

Identified pits able to be used for tree planting

02/ WORKS TO IMPROVE AND PRESERVE GREEN AREAS



79 M€

Budget for works to improve and preserve green areas



85

Expected remodelling works



64

Finalised works (75% of total)

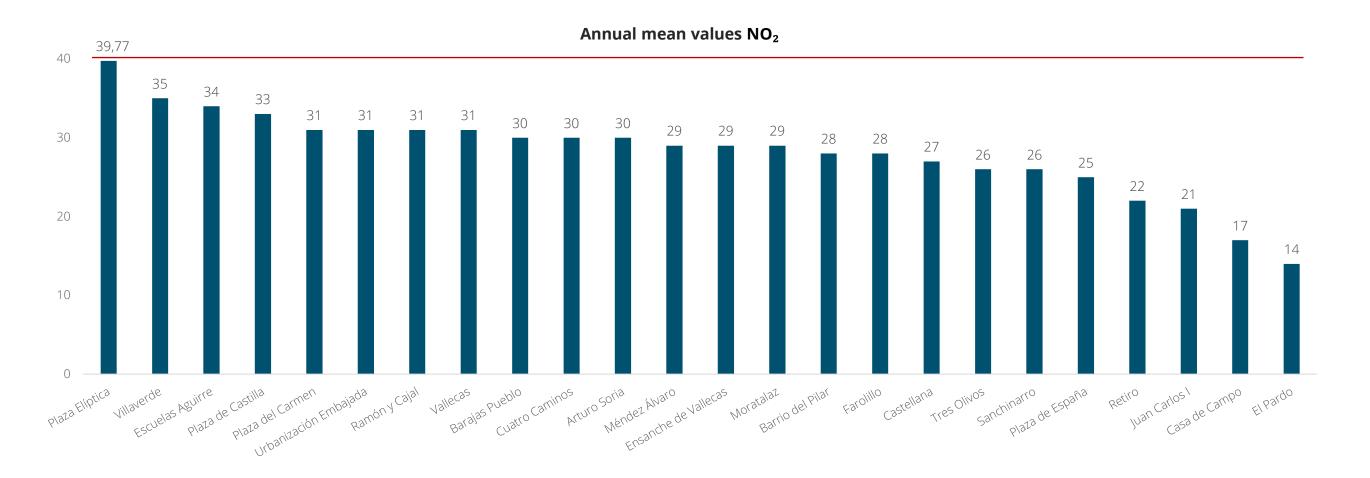
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General status

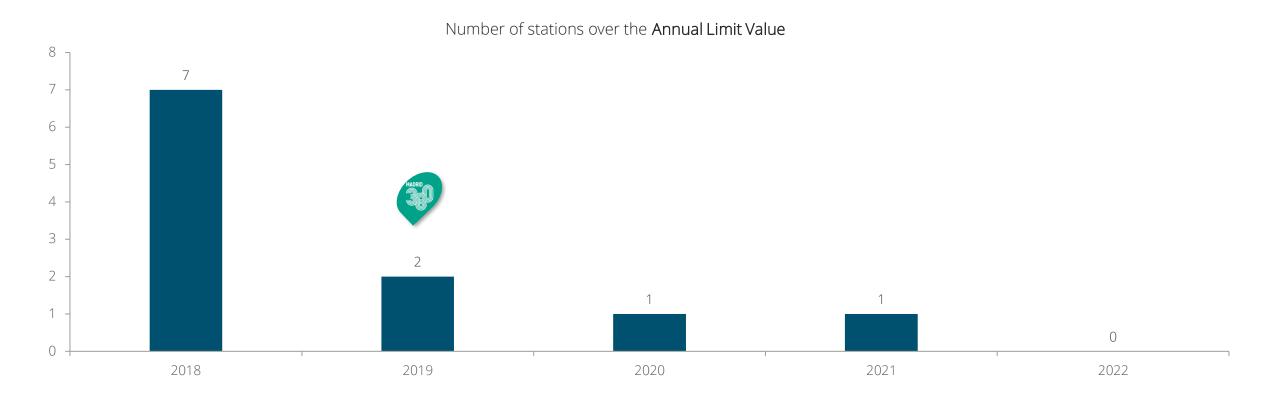
Madrid complies for the first time with the Air Quality European Directive



03. Mejora de la calidad del aire de la ciudad

Annual Limit Value (VLA)

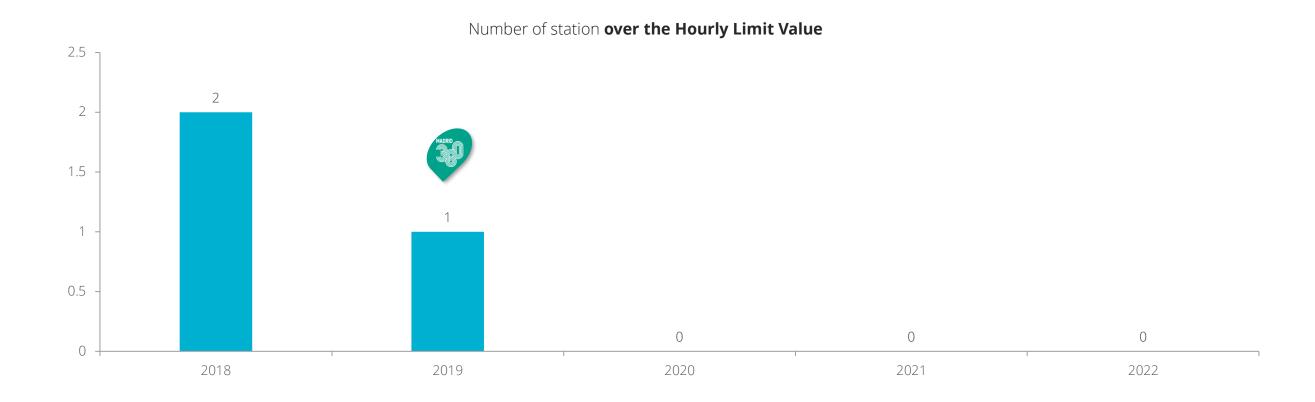
In 2020 and 2021, only the Plaza Elíptica station went over the annual limit stablished by the European Directive. In 2022, it stayed under the limits with 39,77 μg/m³, what has made possible to comply with the European regulations. The mean value of the 24 station was 28,29 μg/m³, a **22,7 % less than 2018**



Note: According to Directive 2008/50/EC, the HLV may not exceed 200 micrograms per cubic meter (μ g/m³) more than 18 times a year for the same station in spot measurements, and the ALV is set at 40 μ g/m³ as the maximum allowed as the average value of the measurements per station.

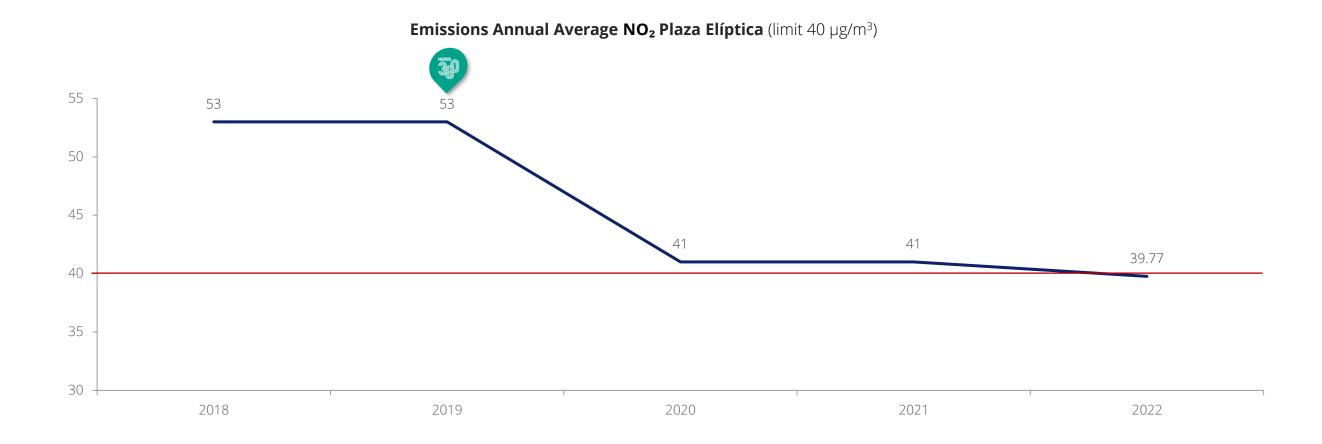
Hourly Limit Value

For the third year in a row, all stations are under the Hourly Limit Value (HLV) stablished by the 2008/50/CE Air Quality Directive, a limit that was continually breached between 2010 and 2019.



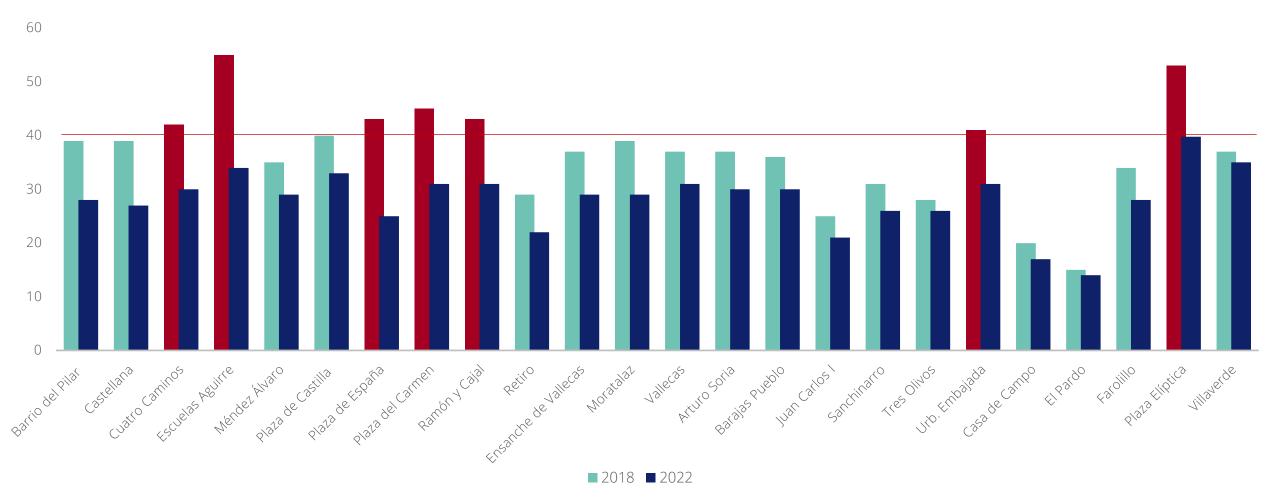
Plaza Elíptica

Below the detailed **Plaza Elíptica station** measurements, the only station the did not comply with the Annual Limit Value in 2020 and 2021, and that has finally gone **under the EU Directive set limit values in 2022**.



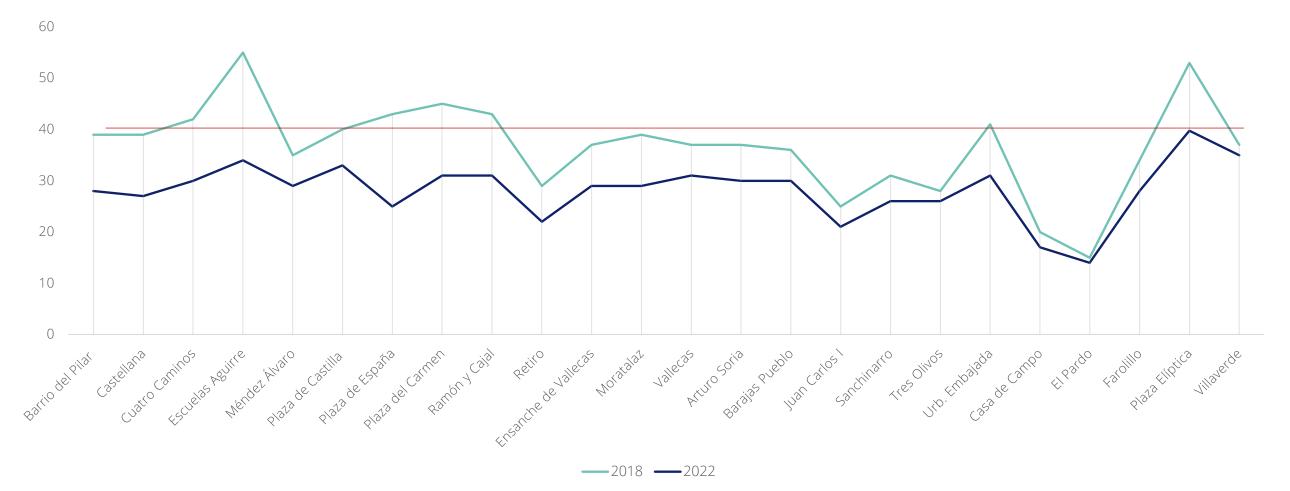
Annual mean Values





Annual Mean Value





Annual Mean Values

ZONE	STATIONS	2018	2022	EVOLUTION 2022 vs 2018
Zona 01 (Inside M-30)	Barrio del Pilar	39	28	↓ 28,21%
	Castellana	39	26	↓ 30,77%
	Cuatro Caminos	42	29	↓ 28,57%
	Escuelas Aguirre	55	34	↓ 38,18%
	Méndez Álvaro	35	29	17,14%
	Plaza de Castilla	40	32	17,50%
	Plaza de España	43	24	41,86%
	Plaza del Carmen	45	31	↓ 31,11%
	Ramón y Cajal	43	30	↓ 27,91%
	Retiro	29	22	24,14%
Zona 02 (Southeast)	Ensanche de Vallecas	37	29	1 21,62%
	Moratalaz	39	28	25,64%
	Vallecas	37	30	16,22%

ZONE	STATION	2018	2022	EVOLUTION 2022 vs 2018
Zona 03 (Northeast)	Arturo Soria	37	29	18,92%
	Barajas Pueblo	36	30	16,67%
	Juan Carlos I	25	21	16,00%
	Sanchinarro	31	25	16,13%
	Tres Olivos	28	26	1 7,14%
	Urb. Embajada	41	31	24,39%
Zona 04 (Northwest)	Casa de Campo	20	17	15,00%
	El Pardo	15	14	↓ 6,67%
Zona 05 (Southwest)	Farolillo	34	28	17,65%
	Plaza Elíptica	53	40	24,96%
	Villaverde	37	35	5,41%
N° STATIONS > 40 μg/m³		7	0	

