AREA C and AREA B in Milan

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Sustainable Urban Mobility Plan – 4 pillars

Sustainable Mobility

- Ensure high accessibility
- Reduce dependancy on private vehicles
- Redistribute public space in favor of active mobility
- Encourage compliance with the road rules

Equity, security, social cohesion

- Reduce road accidents
- Reduce the exposure to noise and air pollutants
- Overcome barriers in access to mobility services
- Enhance freedom of choise in favor of more sustainable modes of transport

Environmental quality

- Reduce emissions of air pollutant
- Reduce energy consumption and emissions of greenhouse gases
- Preventing and reducing noise pollution
- Improve the urban landscape quality

Innovation and economic efficiency

- Ensure economic balance to mobility system
- Internalise environmental, social and health costs
- Promote economic efficiency of commercial traffic
- Optimize use of mobility resources

AREA C – Peculiarity

Milan is the **only city in the world** which experienced **2 type of road pricing measures**

2008 - Ecopass scheme (pollution charge)

2012 - Area C (congestion charge)

The scheme was upgraded following the results of a **referendum asking a plan of action to enhance public transport and alternative mobility, the extension the road charge to all vehicles (except those with zero emission) and the progressive widening of the area subjected to the pricing.**

The referendum was approved **by 79%** of voters, **in stark contrast with the experience of other cities**, where voters have turned down charging schemes (e.g. **Edinburgh**, **Manchester**) or been barely decisive (in **Stockholm**, only 51% of voters were in favour of introducing a congestion charge scheme). **London's** congestion charge has been introduced in 2003 without referendum.

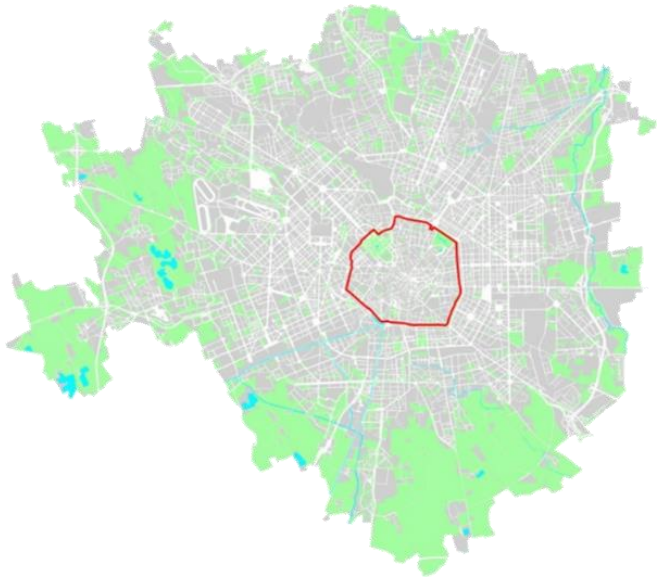
From Pollution Charge to Congestion Charge

Ecopass resulted a drastic traffic drop in 2008 **(-21%)**, however, over time, the **increase in the share of exempted vehicles** (while in 2007 50% of vehicles entering the area would have been exempted from Ecopass, in the first year of the scheme this percentage went up to 75% and in 2010, the share of exempted vehicles was as high as 90%!) gradually **reduced the dissuasive power** of Ecopass.

Moreover, following the results of a bottom-up **referendum** in which a large majority of voters **(79%)** demanded an upgrade of the Ecopass measure, the scheme was upgraded to a congestion charge in 2012.

Milan Congestion Charge – AREA C

2012 – Objective: to improve life conditions of those who live, work, study and visit the city. “Area C” is the restricted traffic zone in the city center of Milan (C as Cerchia Bastioni).



The access points, **monitored by cameras**, are **43**, including 7 for exclusive use of public transport. The charge is active **Monday-Friday from 7.30am to 7.30pm**. Each ticket to enter “Area C” must be activated the **same day** or **no later than midnight of the next day access**. Payment (5€) enables vehicles to drive around, leave and re-enter the charging zone **as many times as required in one day**.

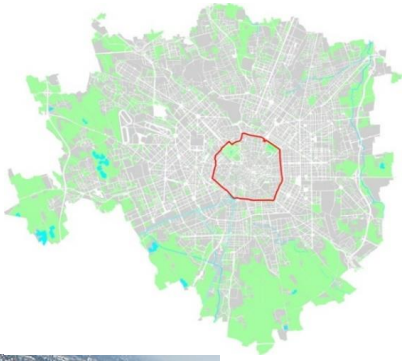
AREA C – The context (pre-pandemic data)

- The area = **8.2 km²**, **4.5% of the whole territory** of the Municipality of Milan

- **Residents** = **77,950** (42,300 families)

- The area has an **outstanding attractiveness** because of the activities and services settled in, that determine during the central daylight hours an average of 39.000 persons/km², with **a peak of almost 140.000 person/km²** within the **historic center** between **Duomo** and **San Babila**

- **There are 295.704 employees**, amounting to **almost 37% of the total employees** of the Municipality of Milan.

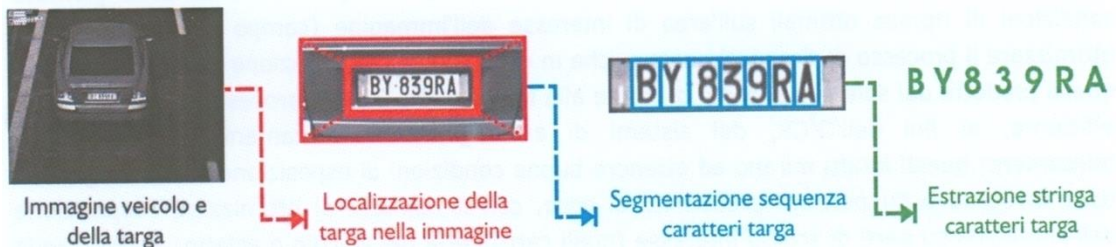


Every day about **500.000 people,** coming from outside, get there

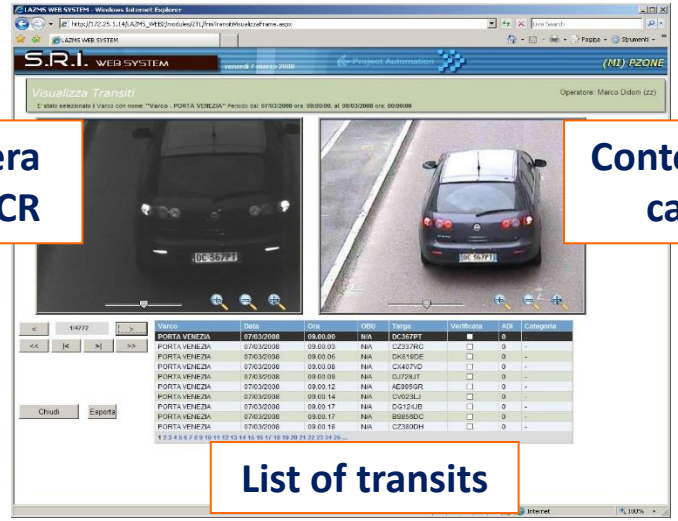
AREA C – Technologies: electronic gates

Integrated IR illuminator

Context (CTX) camera



IR camera with OCR



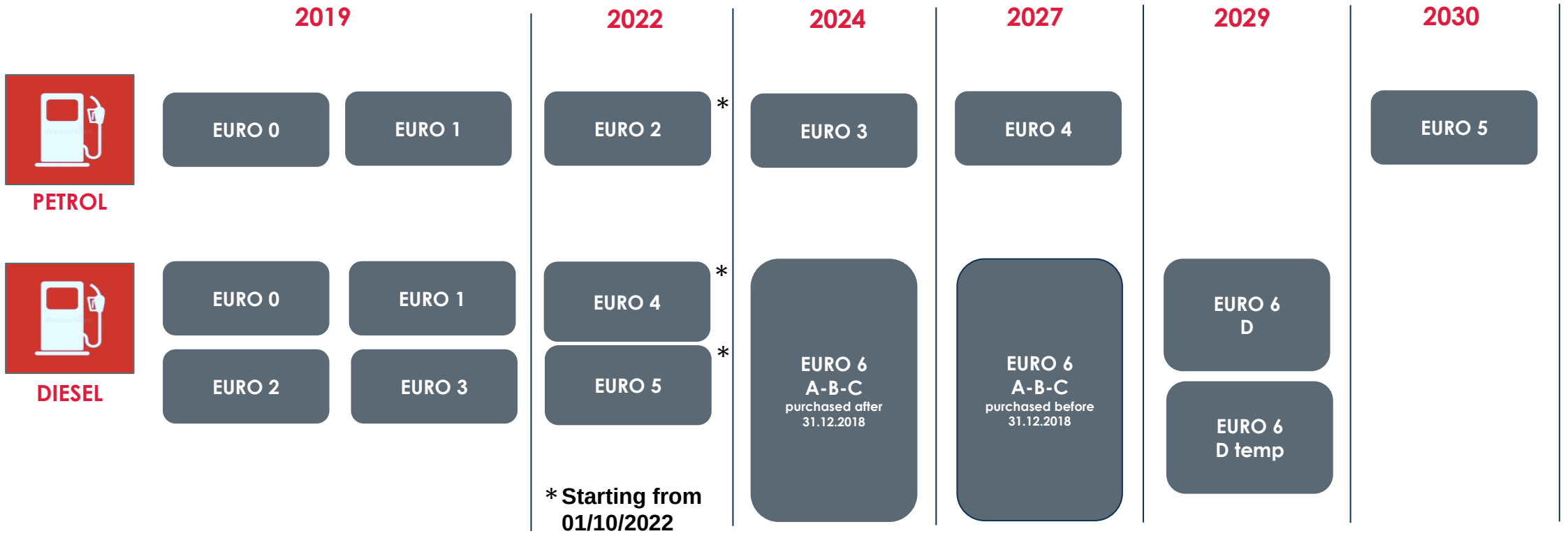
Context (CTX) camera

List of transits

Area C - Rules and bans

Residents: the first **40 accesses** (every year) are **free.** From 41st access onward they **pay 2 €**
Service vehicles pay 3 € (after registration).
Access is **free** of charge for **electric vehicles**, **mopeds** and **motorbikes** and **M1 hybrid vehicles** (electric-thermal propulsion) with an **emission contribution ≤ 100 g/km.** Access is **always permitted for Euro 6 petrol vehicles**.

Access is progressively prohibited to personal transport vehicles cat. M1 (Vehicles designed and constructed for the carriage of passengers, with no more than eight seats in addition to the driver's seat):



AREA C – Special time window for e-freight vehicles

FORBIDDEN ACCESS 8am – 10am
To freight transport vehicles

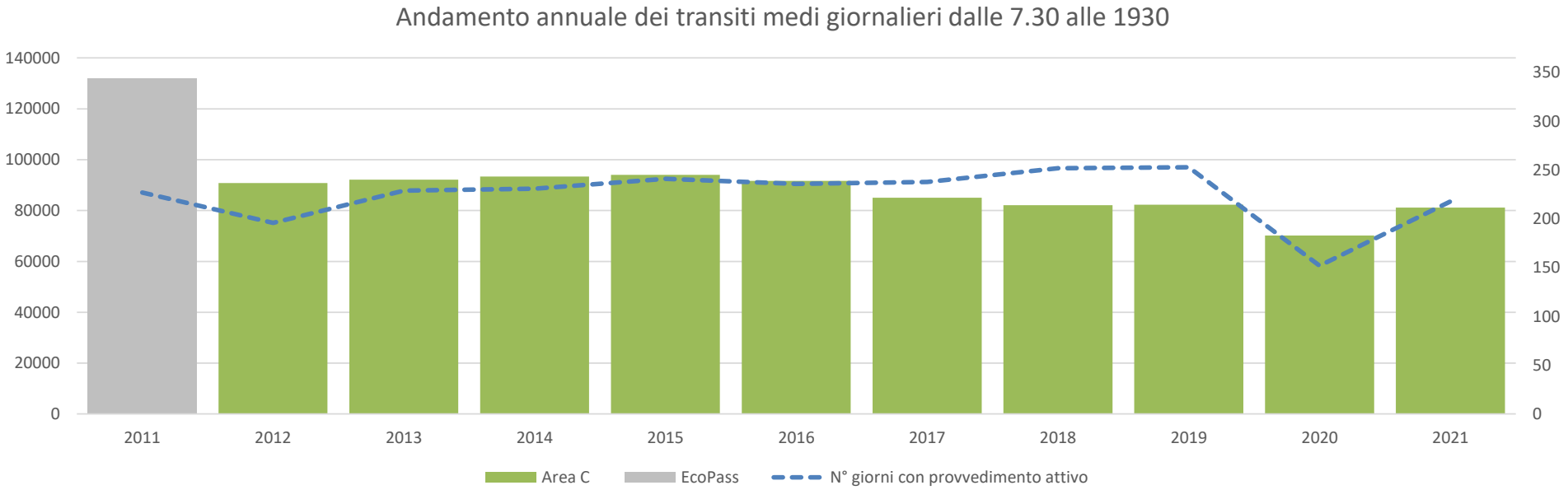
Only freight electric vehicles admitted (with some exemption)

AREA C – The objectives

<u>Decreasing vehicular access to the Area C,</u> therefore:

- ✓ **Decreasing traffic congestion;**
- ✓ **Improving public transport speed;**
- ✓ **Decreasing the occupation of on-street parking;**
- ✓ **Reducing road accidents;**
- ✓ **Reducing pollutant emissions caused by traffic;**
- ✓ **Reducing health risks related to air pollution;**
- ✓ **Increasing the share of sustainable modes of travel;**
- ✓ **Improving urban center quality and attractiveness;**
- ✓ **Raising funds for sustainable mobility services and infrastructures.**

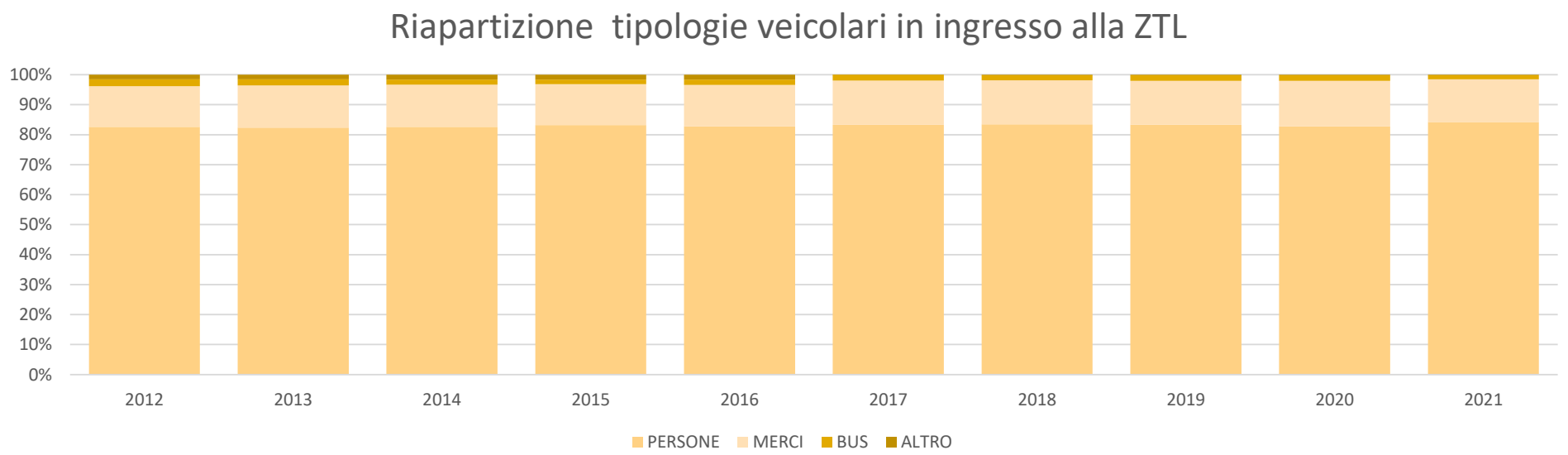
Area C – Annual trend of average daily transits from 7:30 am to 7:30 pm



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Average daily transits	131.898	90.849	92.175	93.342	94.033	91.687	85.049	82.140	82.306	70.195	81.181
Variation compared to y. 2011	0,0%	-31,1%	-30,1%	-29,2%	-28,7%	-30,5%	-35,5%	-37,7%	-37,6%	-46,8%	-38,5%
Number of days with system in operation	227	196	229	231	241	236	238	252	253	152	218

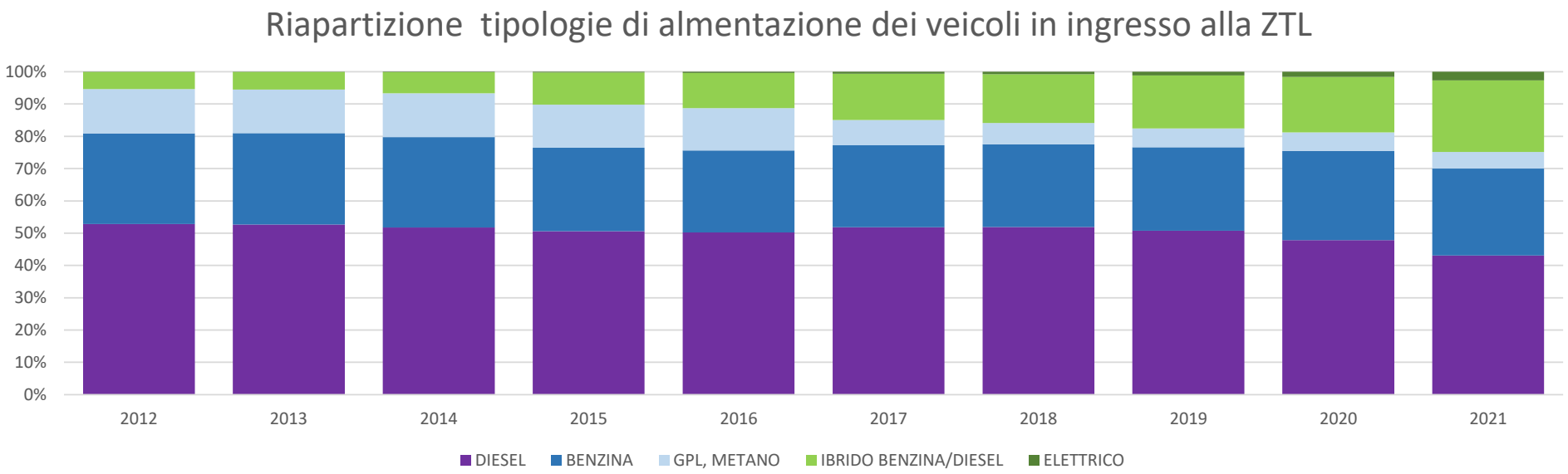
** In order to allow comparison between years with different operating hours, the accesses from 7.30 am to 7.30 pm on weekdays with an active measure have been taken into account.*

Area C – Distribution of vehicle types



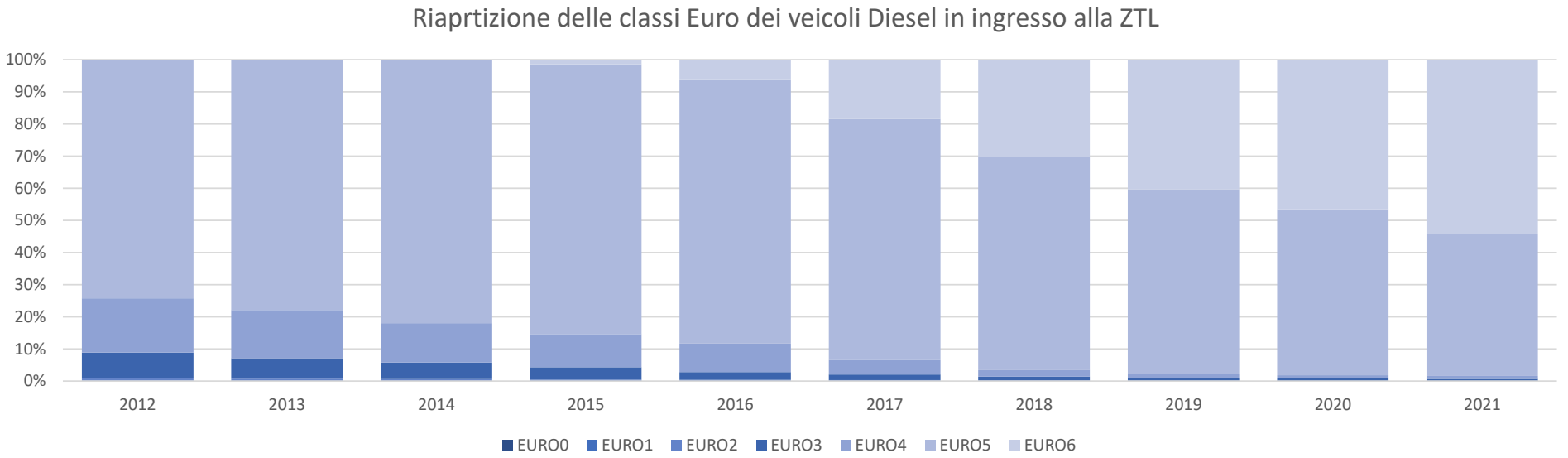
Vehicle type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
PEOPLE	82,6%	82,3%	82,6%	83,2%	82,8%	83,4%	83,4%	83,4%	82,8%	84,2%
BUS	2,2%	2,0%	1,7%	1,5%	1,8%	1,9%	1,7%	1,8%	1,9%	1,4%
FREIGHT	13,6%	14,1%	14,1%	13,7%	13,8%	14,7%	14,7%	14,6%	15,1%	14,2%
OTHER	1,6%	1,6%	1,6%	1,6%	1,6%	0,0%	0,2%	0,2%	0,2%	0,1%

Area C – Distribution of power vehicles



POWER VEHICLES	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
PETROL	28,1%	28,3%	28,0%	25,9%	25,4%	25,4%	25,6%	25,9%	27,6%	26,9%
DIESEL	52,8%	52,7%	51,7%	50,5%	50,3%	51,8%	51,9%	50,8%	47,9%	43,1%
ELECTRIC	0,1%	0,1%	0,1%	0,3%	0,4%	0,6%	0,8%	1,1%	1,6%	2,7%
LPG, METHANE	13,7%	13,5%	13,7%	13,3%	13,0%	7,8%	6,6%	5,8%	5,7%	5,1%
HYBRID PETROL/DIESEL	5,3%	5,4%	6,5%	10,0%	10,9%	14,4%	15,1%	16,4%	17,2%	22,2%

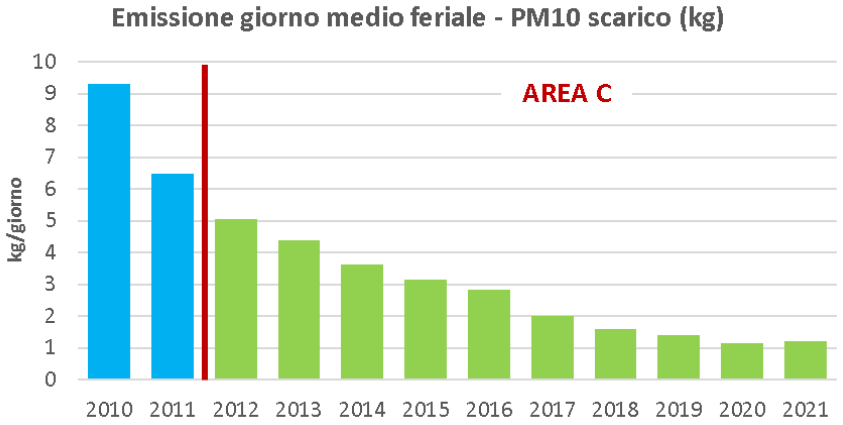
Area C – Distribution of vehicles Euro class

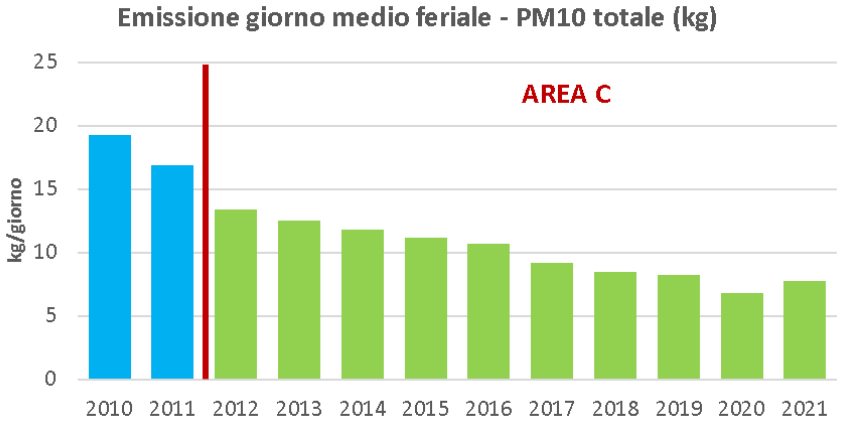


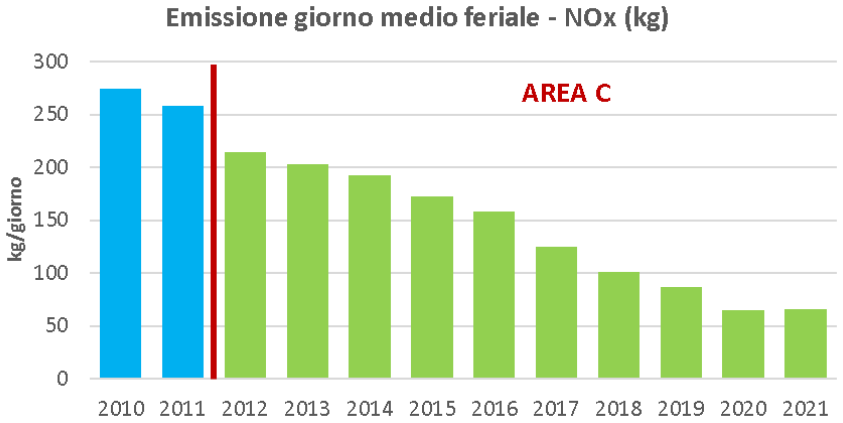
Euro Class	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
EURO0	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
EURO1	0,1%	0,1%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
EURO2	0,8%	0,6%	0,5%	0,4%	0,3%	0,2%	0,2%	0,1%	0,1%	0,1%
EURO3	8,0%	6,4%	5,1%	3,9%	2,5%	1,8%	1,2%	0,8%	0,8%	0,6%
EURO4	16,9%	15,0%	12,3%	10,3%	8,8%	4,5%	2,0%	1,2%	1,0%	0,9%
EURO5	74,2%	77,9%	81,9%	83,9%	82,4%	75,1%	66,2%	57,6%	51,6%	44,2%
EURO6	0,0%	0,0%	0,1%	1,5%	6,0%	18,4%	30,4%	40,3%	46,5%	54,2%

Area C – Emissions of air pollutants

Historical series of weekday average daytime atmospheric emissions of PM10 exhaust, total PM10 (i.e. exhaust + friction) and total nitrogen oxides (NOx). The emission values relate to the daytime of weekdays during which Ecopass and Area C were active and are expressed in kg/day.







	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
PM10 scarico	9,3	6,5	5,1	4,4	3,6	3,1	2,8	2,0	1,6	1,4	1,1	1,2
PM10 totale	19,3	16,9	13,4	12,5	11,8	11,2	10,7	9,2	8,5	8,2	6,8	7,8
NOx	274	258	215	203	192	173	158	124	101	86	65	66

Area C – Environmental Impact

The data show that AREA C has had a **direct effect on traffic** in the city centre and its effect has been consolidated over time and continues to work. Its introduction has helped to significantly **reduce the pollution** generated by the cars that have passed through it over the years. This is also due to the fact that, at the same time, it has **helped to change the car fleet in the city**, progressively leading citizens towards more ecological choices from which all Milanese benefit, not just those resident in the LTZ. This momentum has been supported by the **Administration**, which in recent years **has invested more than 20 million euros in grants** for the purchase of **vehicles with a lower environmental impact.**

AREA C – Economic and social results

Area C achieved important results not only in terms of environmental, but also with regard to **economic** and **social sustainability**. As to the economic aspects, as a counterweight to the charge, several are the benefits enjoyable by users.

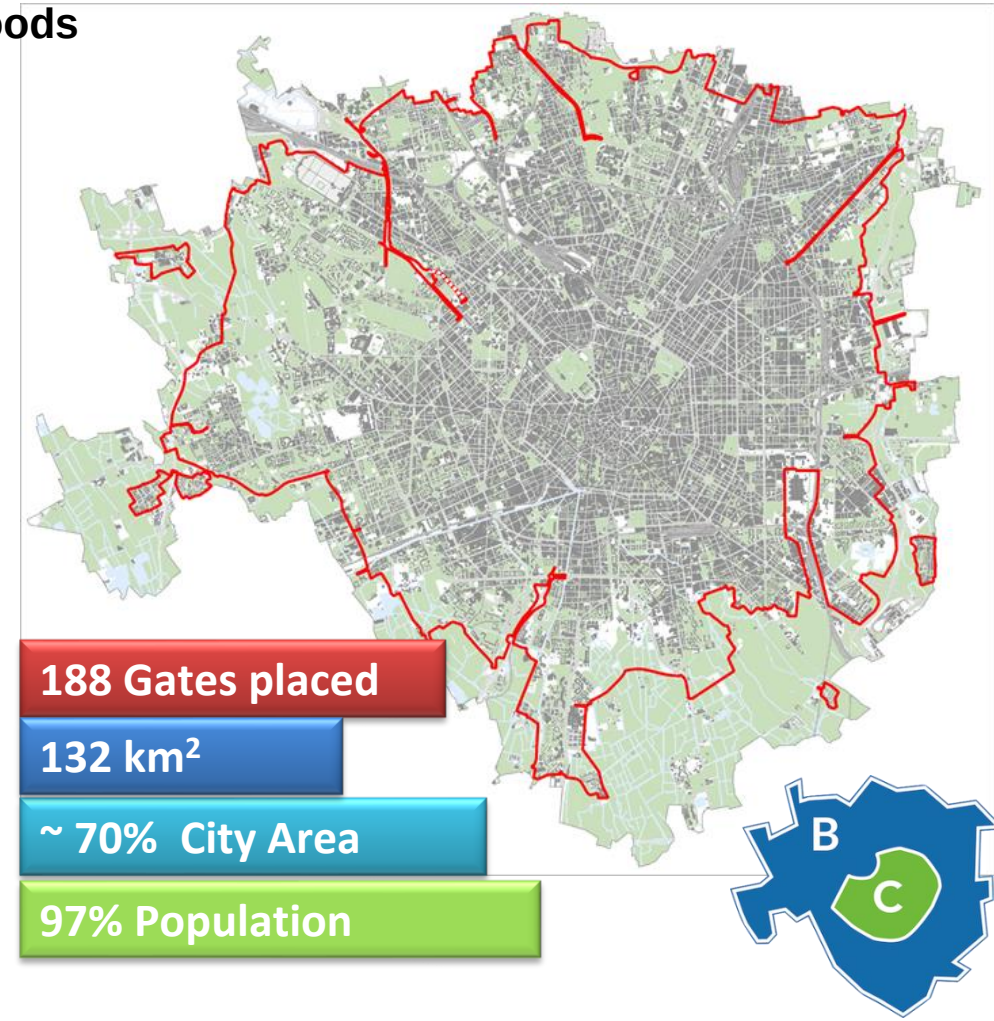
The reduction of the cars circulating in the city center enables the **reuse of the public spaced** once reserved to the parking. For instance, **an area of approximately 15.000 sqm near Castello Sforzesco was turned into a pedestrian area**, and new bike sharing stations and car sharing services were set up in the city.

Moreover, thanks to Area C, the **traffic reduction generated benefits to the whole transport systems**. In fact, according to a recent statement of AICAI (Courier Aircraft Association), the Area C has resulted in an **increase in productivity of 10% on freight deliveries in the city.**

AREA B – Low Emission Zone

Control of the most pollutant vehicle and control and tracking of access for heavy vehicles and for the transport of dangerous goods

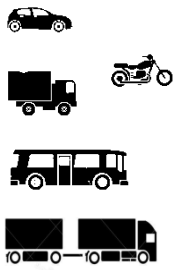
As stated in the Sustainable Urban Mobility Plan, in February 2019 the City of Milan launched the Italy's largest Limited Traffic Zone and **one of the largest Low Emission Zone of Europe**, called **Area B**, an **infrastructure of electronic gates** around and next to the municipal boundary. The systems is set up for the **control of the most pollutant vehicles** and for the **control** and **management** of the most **heavy vehicles** and the ones used for the **transport of dangerous goods.**



AREA B - The system

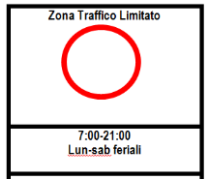
CONTROL SYSTEM

188 Electronic gates



Connection to the DVLA database
Technical vehicles data check

Road signage



Variable message signs

L e Z

AreaC

WEB Portal

Residents and exemptions

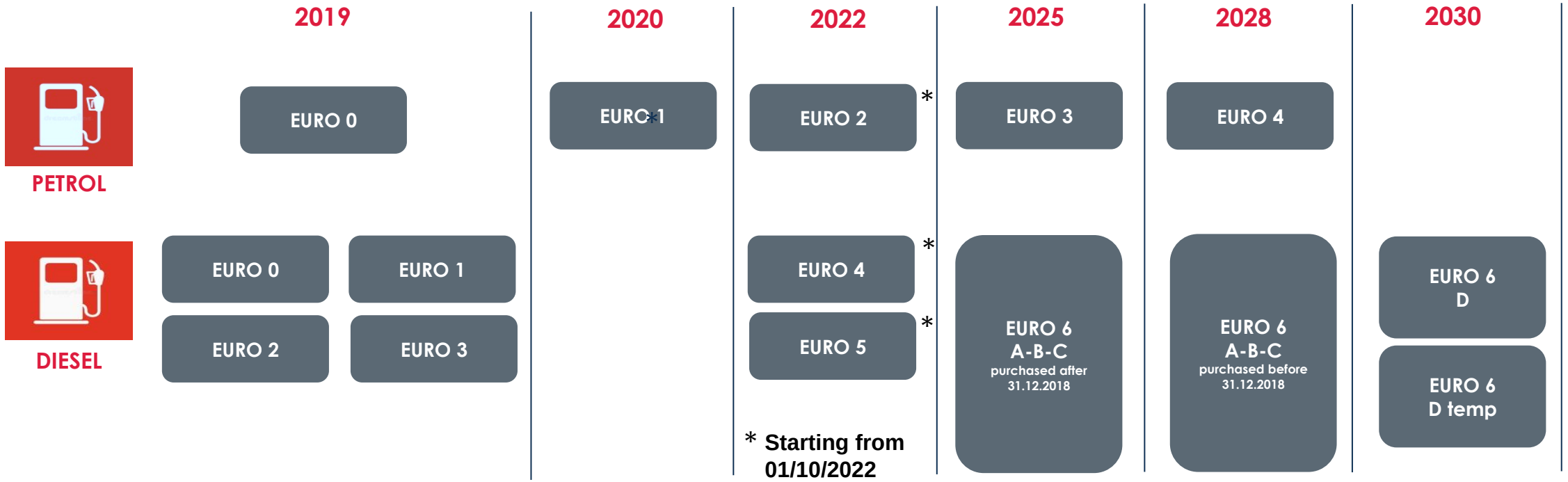
OFFICE

Back-office Front-office

AREA B – Rules and bans

As foreseen in the Sustainable Urban Mobility Plan, in February 2019 the Municipality of Milan launched the **largest Limited Traffic Zone in Italy** and **one of the largest Low Emission Zones in Europe**, called Area B, delimited by **188 gates** with cameras around the municipal boundary. The system is designed to **control the most polluting vehicles** and to control and manage the **heavier vehicles** and those used to transport **dangerous goods**.
Access is always allowed for Euro 6 petrol, electric and hybrid vehicles.

Access is progressively prohibited to personal transport vehicles cat. M1 (Vehicles designed and constructed for the carriage of passengers, with no more than eight seats in addition to the driver's seat):

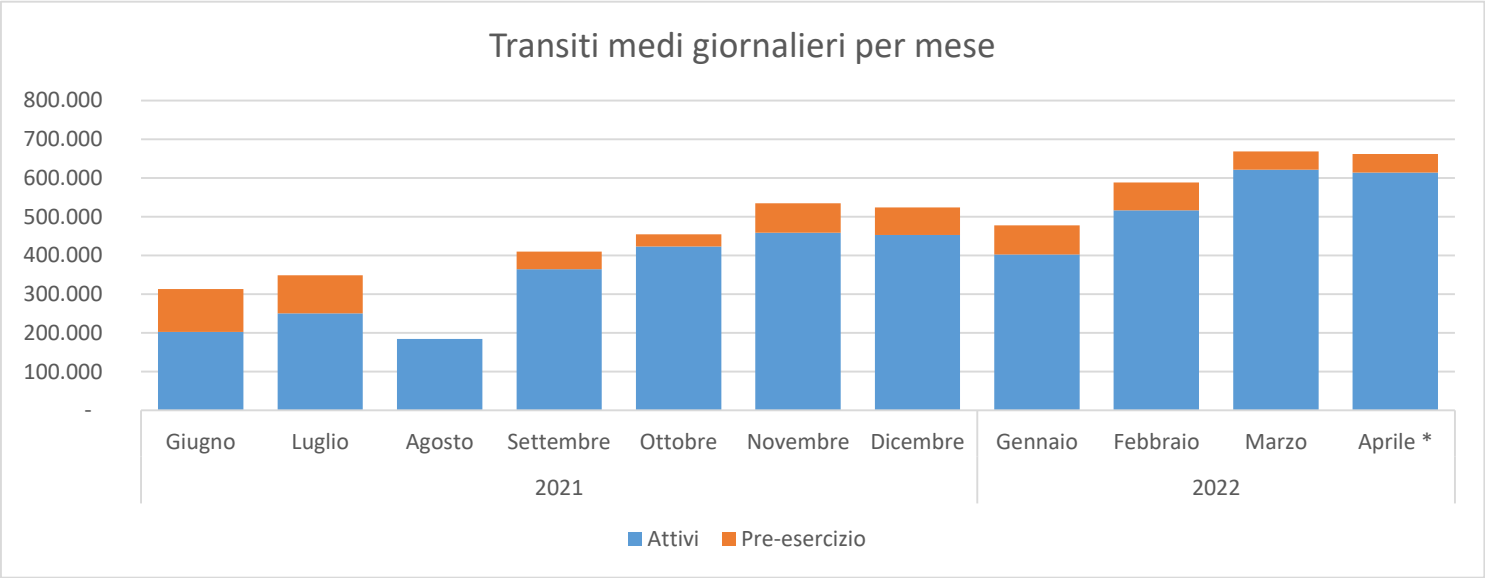


Area B - Monthly trend of average daily transits

Daily Average Transits per Month			
Month		Gates Opearting	Pre-operational Gates
2021	June	**202.472**	**110.483**
	July	**250.480**	**98.332**
	August	**184.416**	**n.a.**
	September	**364.899**	**44.944**
	October	**422.836**	**31.939**
	November	**458.462**	**76.681**
	December	**453.003**	**71.487**
2022	January	**402.765**	**75.017**
	February	**516.882**	**71.735**
	March	**621.490**	**47.239**
	April **	**614.028**	**48.199**

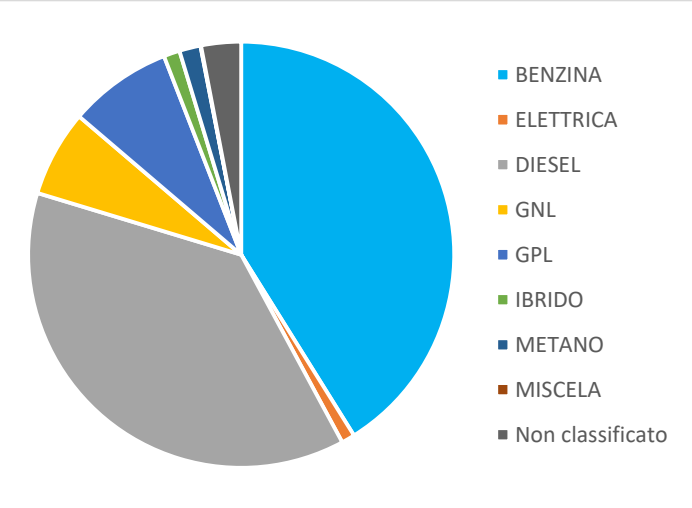
*** Data from 1st to 20th April*

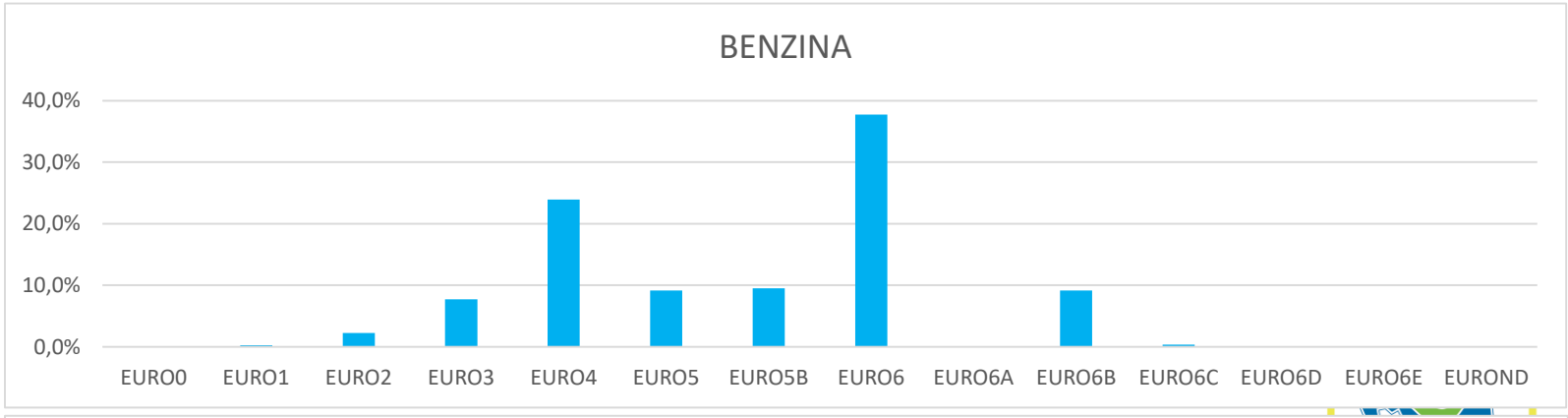
On 20 April, the first day of operation of all 188 monitoring points, approximately 650,000 entries were recorded, corresponding to 400,000 different vehicles.

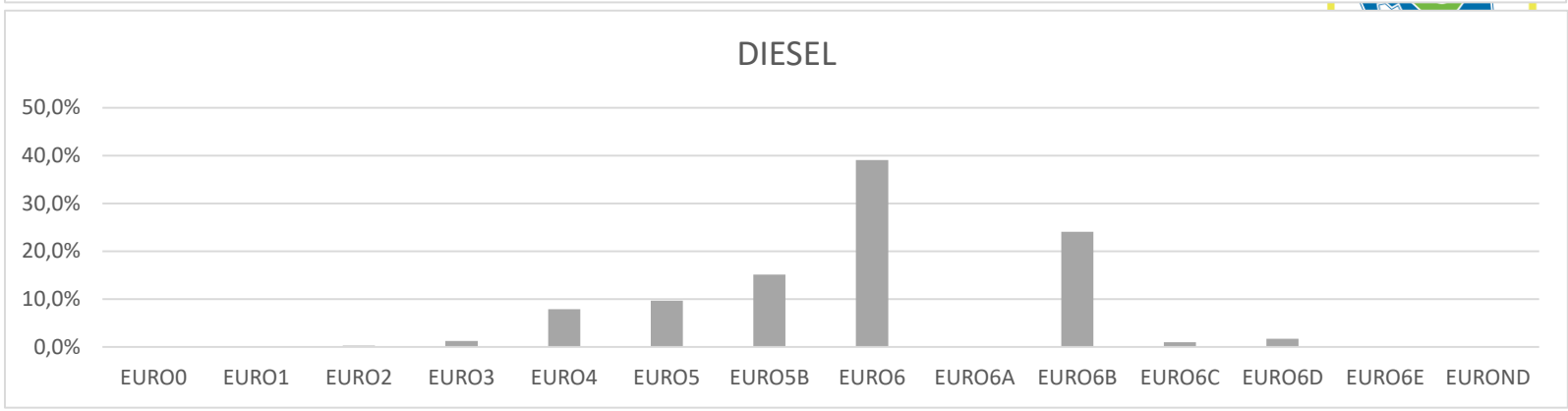


Distribution by fuel type and Euro class (*Subset of transits during February 2022)

Power	Distribution %
PETROL	41%
ELECTRIC	1%
DIESEL	38%
LIQUEFIED NATUAL GAS	7%
LIQUEFIED PETROLEUM GAS	8%
HYBRID	1%
METHANE	2%
MIX	0%
NOT CLASSIFIED	3%







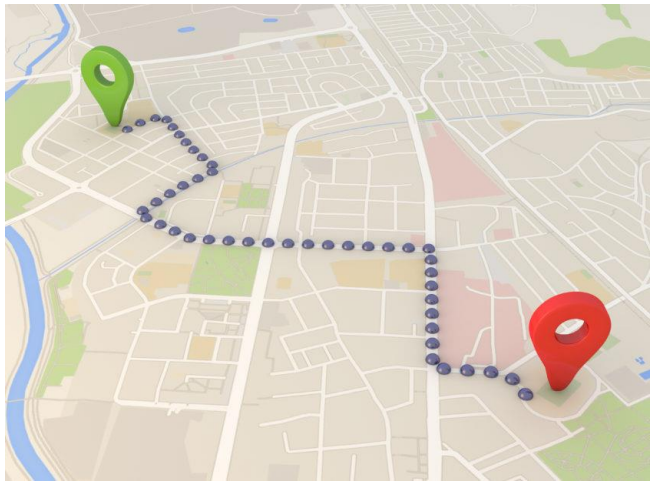
POWER	EURO0	EURO1	EURO2	EURO3	EURO4	EURO5	EURO5B	EURO6	EURO6A	EURO6B	EURO6C	EURO6D	EURO6E	EUROND
PETROL	0,02%	0,23%	2,23%	7,71%	23,90%	9,15%	9,50%	37,72%	0,00%	9,15%	0,33%	0,04%	0,00%	0,01%
DIESEL	0,02%	0,02%	0,23%	1,23%	7,89%	9,67%	15,11%	39,06%	0,01%	24,08%	0,98%	1,69%	0,01%	0,00%

Street vendors most pollutant vehicles project

On 25 February 2019, in correspondence with the launching of Area B, **street vendors** who had **a very polluting vehicle** or a very old car **were allowed to drive in Area B**, as long as they **did not exceed a certain distance**. Such vendors were allowed to install for free a **device (OBU)** capable of calculating the mileage within Area B, in the operational days and times.

500 km per year were granted to the operators who signed the agreement and installed the OBU device to travel within the Area B boundaries. 500 kilometers per annum were calculated proportionally to the number of working days that elapsed between the date of accession in the trial and the end of the year.

This measure responds to a **principle of equity** as it was designed to **give the possibility**, even to those who could not afford the change of the vehicle, **to continue to carry out their work**.



AREA B – MOVE-IN project

The street vendors project has now merged into **Move-In project**, an experimental project of the Lombardy Region for Area B of Milan and some areas of the Lombardy territory. It is an **alternative to the exemptions** ordered for vehicles fuelled by:

Euro 0, 1 and 2 petrol

Diesel fuel Euro 0, 1, 2, 3, 4 and 5

which are affected by the blocks in Area B and in the Lombardy Region.

A **black-box**, installed on the vehicle, allows real distances to be detected through the satellite connection to a dedicated technological infrastructure. By joining MoVe-In, owners of these vehicles will be **free to circulate** on any day and at any time **until they reach an annual mileage limit.**

The **allocation of kilometres is based on the original Euro class** and not on the class resulting from the possible installation of an after-market or standard particulate filter. The device measures all mileage, i.e. not only when Area B is active.

Move-In **rewards** those who adopt an **environmentally friendly driving style** by awarding them additional kilometres that expand on the originally planned ceiling.

AREA C and B – Lesson learned

- **STRONG POLICAL COMMITMENT:** Strong leadership of the Major was fundamental to communicate, raise awareness and support the traffic regulation measures by public meetings held with citizens, stakeholders and associations.

- **AGREEMENTS:** Agreements with stakeholders

- **CITIZEN ENGAGEMENT:** Public Debates

THANK YOU FOR YOUR ATTENTION

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