

ASECAP DAYS



MILANO 2024



ORGANIZED BY



HOSTED BY



ASECAP DAYS



MILANO 2024

Contactless Tolling technologies

Milano Serravalle Milano Tangenziali S.p.A experience, data comparisons and assessment related to the introduction of Contactless tolling technologies

ORGANIZED BY



HOSTED BY

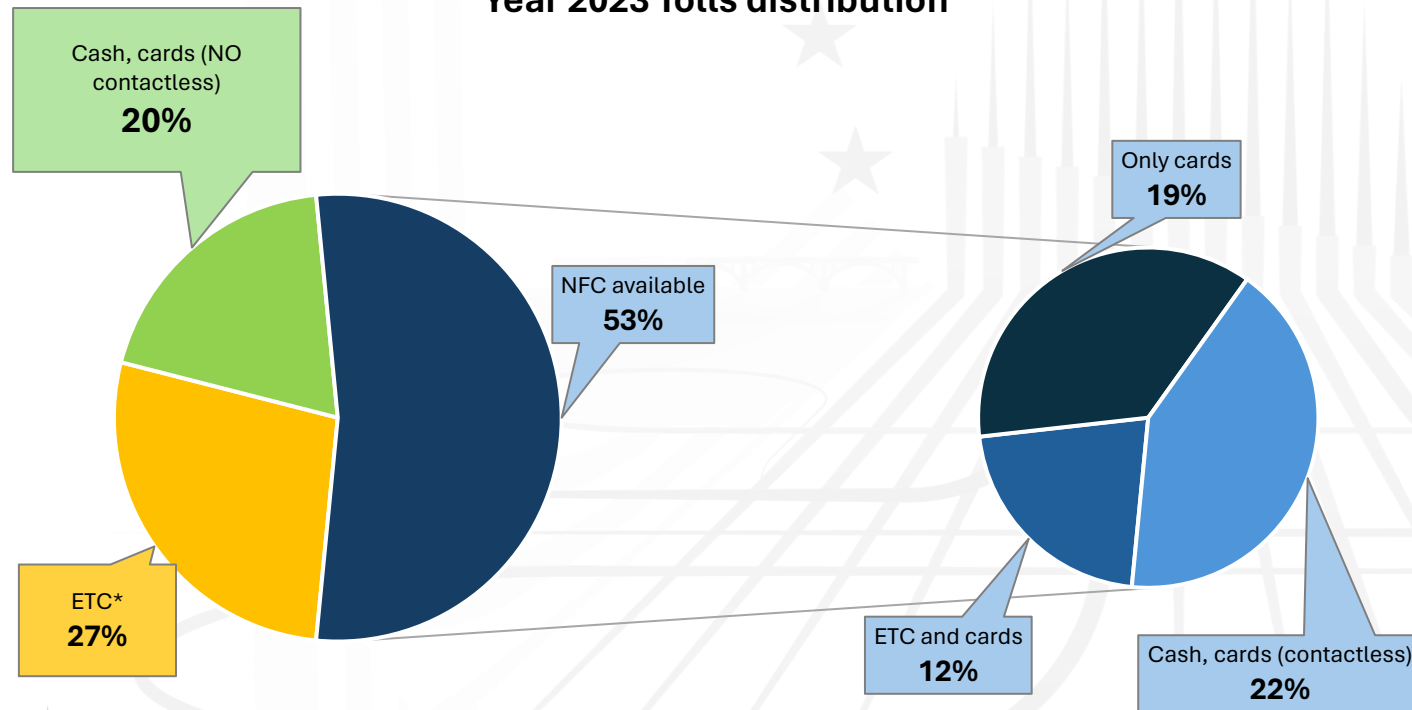


CONTACTLESS: ADVANTAGES AND DISADVANTAGES

Comparison of contactless payment usage before 2019 to post-installation in 2023

Toll exit lanes contactless availability : • 2019: 0
• 2023: 60

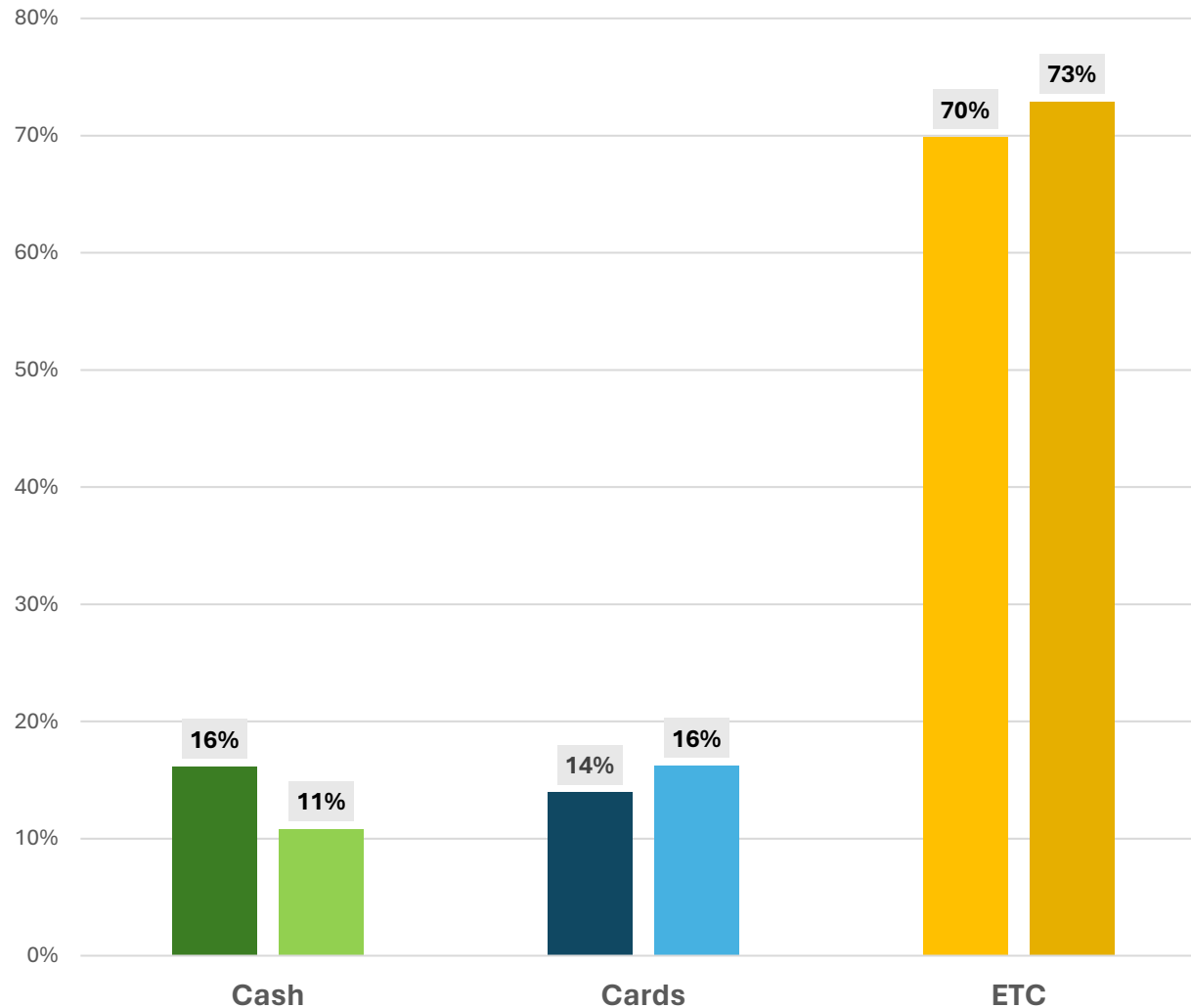
Year 2023 Tolls distribution



*ETC: electronic tolling collection

PAYMENT METHODS

2019 vs 2023



A significant number of the users that relied on cash payment in 2019 have transitioned to card payment, some of them also converted to **electronic tolling collection (ETC)**.

As per 2023, **73%** of the people that paid by card used NFC, increasing each month peaking **84%** in January 2024.

Payment methods	$\Delta\%$
Cash	-5%
Cards	+2%
ETC	+3%

COST SAVING IN MAINTENANCE

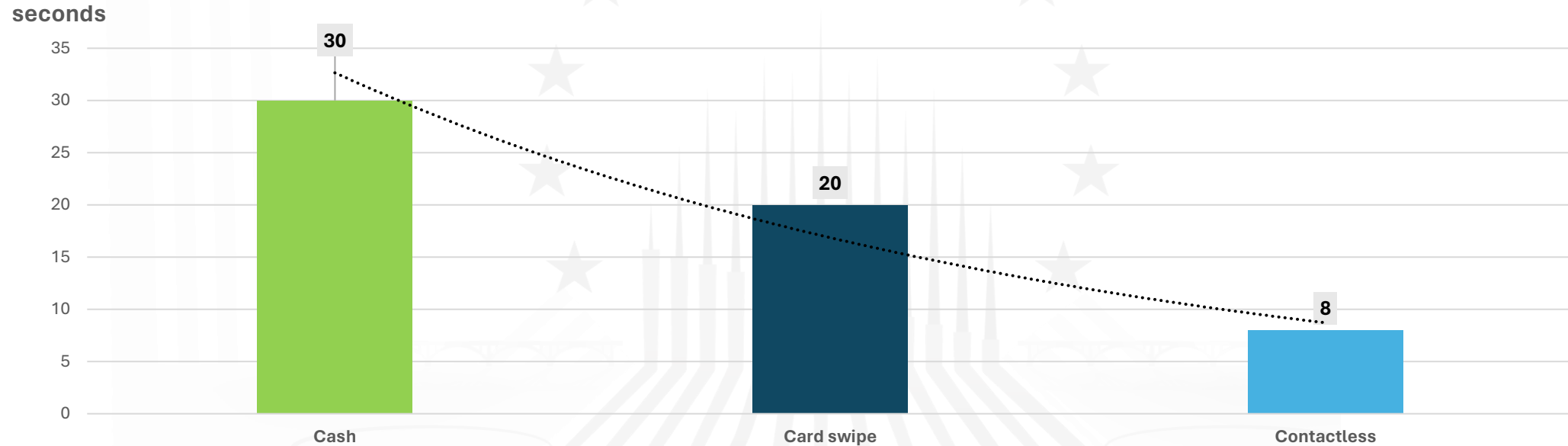
COSTS	Δ%
Maintenance spare parts cost	-61,1%
Count of major maintenance interventions	-70,5%
Labor cost	-70,5%

Replacing traditional cash tolls with new cards and contactless systems has brought also several maintenance advantages, including:

- Reduction in maintenance costs
- Decrease in expenses for extraordinary maintenance
- Lower costs for hourly labor in extraordinary maintenance
- Decrease in spare parts costs

TIME SPENT PAYING

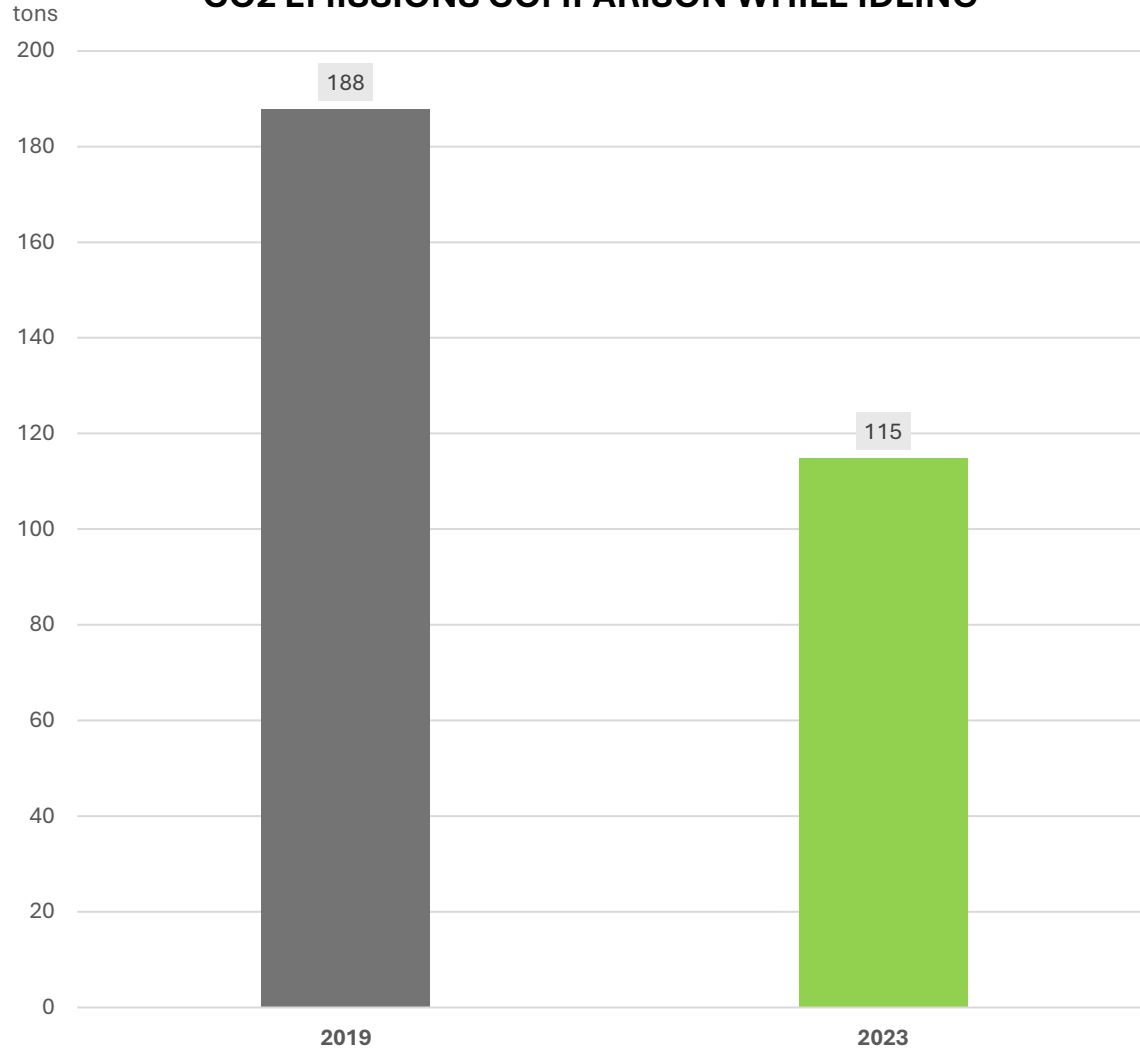
TOTAL ELAPSED TIME BY PAYING METHOD



By replacing the traditional toll booths with modern contactless ones, we not only decreased the time required for each passage, but also incentivized more users to pay by card instead of using cash
The total time saved annually at the toll amounts to **7,27 YEARS**

CO₂ EMISSIONS AVOIDED DUE TO IDLING DURING PAYMENT

CO₂ EMISSIONS COMPARISON WHILE IDLING



The introduction of contactless payment in 2023 resulted in approximately **73 tons of CO₂** emissions saved compared to the year 2019

Equivalent to about **2200** CO₂-absorbing trees in one year



-39% CO₂ emission reduction in 2023 compared to 2019 only due to the implementation of NFC readers

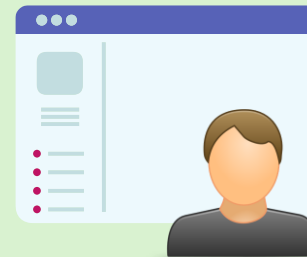
IN THE FUTURE WE CAN EXPECT A NEW COMMON PAYMENT SYSTEM

For example : A new System such as a PREDICTIVE QR CODE & PQRCODE WALLET APP”

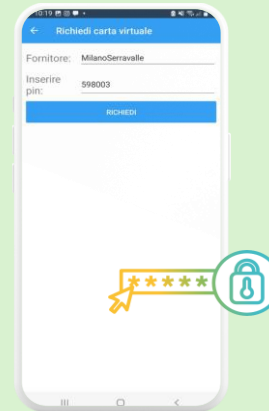
Predictive QR Code® is a new patented* image-based authentication system of QR Codes:

- Unique and it changes every 500 milliseconds
- Works offline
- Mobile-to-mobile
- All payments will be managed with One only
- Generated exclusively by one service provider
- Double authentication through license plate and/or face

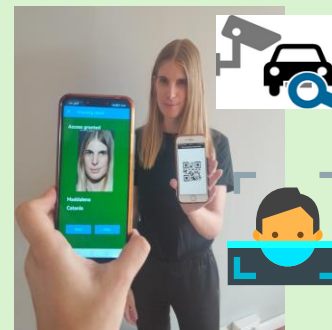
(*) Patent No. 102021000030803 filed on 6/12/2021 granted on 3/26/2024



Users buy a service, like a train pass, bus, etc. via the provider's portal



After payment, they get a PIN to add an authentication card to their PQRCODE Wallet, where all virtual cards are stored



To use the service, they show a Predictive QR Code to a reader, fixed or mobile. Multi-factor authentication can include registering other credentials like a license plate or facial recognition



**THANK
YOU**
GRAZIE

Ruben Perugia
ruben.perugia@serravalle.it
+39 02 57594398

Aurelio Mortoni
aurelio.mortoni@serravalle.it
+39 344 269 63 92



HOSTED BY

ORGANIZED BY

