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# Global Moped Sharing Market Report 2022

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# Table of contents

<b>Intro and overview</b>	<b>03</b>
<b>Mopeds and operators</b>	<b>10</b>
<b>Regional distribution</b>	<b>20</b>
<b>City-level analysis</b>	<b>30</b>
<b>Users and usage</b>	<b>35</b>
<b>Expert interviews</b>	<b>39</b>
<b>Trends</b>	<b>47</b>
<b>Summary</b>	<b>51</b>
<b>About</b>	<b>54</b>

# 1

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## Intro and overview

Getting started with  
definitions and scope



# Our cities are changing

We need new solutions to make our mobility systems future-proof.

The climate is changing, and it's obvious that our urban mobility systems also have to change. Commonly discussed solutions include:

- significant investments in public transport
- boosting non-carbon mobility (walking and cycling)
- electric mobility
- shared mobility

It is our mission to make our mobility systems more sustainable, efficient, seamless, and fairly accessible to all.

Part of the solution to these challenges can be moped sharing. We believe that shared mopeds strongly contribute to more efficient uses of assets by being "the right vehicle for the right use case."



# Global Moped Sharing Market Report 2022

## What is this study about?

The goal of this report is to provide a concise and comprehensive picture of the **current status of the global moped sharing market**. It covers:

- moped sharing categories and types
- shared moped and operator numbers
- operator business models
- regional distribution
- city-level fleets
- users and usage
- expert insights
- trends

We have reviewed public data and conducted dozens of interviews with operators, suppliers, and other industry experts to gather this information.

This study is conducted by INVERS, inventor of automated vehicle sharing, who supports shared mobility operators worldwide to launch, operate and scale their fleet reliably. With its market-leading telematics and software solutions, INVERS enables the full automation of the vehicle rental process through all phases of a rental (start, during, end, and outside of rental).

This report is meant to support shared mobility operators, industry suppliers, OEMs, city authorities, and other mobility stakeholders.



# Defining moped sharing

## What it is, and what it isn't

The focus of this report is **moped sharing**, which might be called differently from market to market, for instance in Spanish-speaking nations, people often refer to motosharing, in India it is most often called bike or scooter sharing, in Germany some people call it Rollersharing.

No matter how you call it, by moped sharing we refer to the growing market of...

- sit-down mopeds/motorcycles/scooters similar to the one pictured on the left
- short- to medium-term rentals (high utilization possible)
- vehicle rentals automated through app-based access (no key handover by employees on-site)

This report does **not** focus on:

- long-term rentals
- vehicle subscription services
- other shared vehicles such as kick scooters or bikes

Most data in this report is current as of August 2022, unless marked otherwise. As always, we tried to include major developments right up until report launch in November 2022.



# Moped sharing categories

## Vehicle classes covered in this report

The world of moped sharing has evolved over the past 10 years, since the first moped sharing service launched in San Francisco, USA. Today, this report covers not only Vespa-like classic mopeds, but also motorcycles and increasingly moped/bike-hybrids. All of them serve similar use cases and we refer to them as moped sharing in this report. We define them, mostly following UNECE (United Nations Economic Commission for Europe) definitions:

**Classic moped:** L1-class according to UNECE. Typically a maximum speed of 45-50 km/h depending on the market. Might vary globally. In case of a combustion engine: often <math><50\text{ cm}^3</math>.

**Classic motorcycle:** L3-class according to UNECE. Can drive faster than L1-class mopeds. In case of a combustion engine: often >math>50\text{ cm}^3</math>.

**Moped/bike-hybrids:** Technically often also covered within the L-class definitions, this section is increasingly getting traction but is situated in a grey zone between moped and e-bikes. As a rule of thumb, many of the operators using this vehicle type run vehicles that visually look like a moped, but are often legally classified as bikes and often do not require users to own a driver's license. Typical speed: 25-35 km/h.

*Note: We often say "moped" in this report and refer to all three of the above mentioned categories. In case we are referring to a specific category from the above list, we are aiming to use the category-specific name.*



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## Executive summary

Moped sharing continues to gain global acceptance. In 2022, we saw **growing numbers of operators and users deploying almost entirely electric fleets across more cities and countries**. Users were flocking to moped sharing services throughout the report's survey period, with an increase in registrations by an estimated 40%. Also, the number of rides increased significantly in key markets such as the major moped sharing hotspots in Europe.

The number of shared mopeds grew slightly on a global level, mainly in the light moped segment (moped/bike-hybrids). Moreover, we listed 9 additional moped sharing countries, bringing the global count to 36 countries. 75% of national markets have fleets

that are bigger, or at least the same size as one year ago. The Netherlands, Turkey and Indonesia are examples for growing markets. Germany, Spain and Poland are examples of the few countries with smaller fleets than in 2021.

This year we also saw the continued emergence of a new form factor, in the grey zone between mopeds and bikes, in this report referred to as '**moped/bike-hybrids**'. Hence, we have integrated a new section in the report dedicated to this category. Indonesia, India, Pakistan, the USA and also very few operators in Europe, have recently added these vehicles to their fleets.

We are curious to see what changes 2023 will bring to the moped sharing market.



# At a glance

2022 in numbers



**17M registrations**

At least +5 million registrations since 2021 (+40%)



**94 operators**

+7 (+8%)



**>220 cities**

Compared to 175 in 2021



**At least 130K\* shared mopeds**

Estimated growth at least 7%



**>40 vehicle brands**

supply the moped sharing industry



**36 countries**

+9 (+25%)



**~97% electrification**

Similar to 2021



**Growth in usage**

e.g. +57% trips in major European cities (YOY, Q2 2022 vs. Q2 2021)

\* Includes classic mopeds, motorcycles and moped/bike-hybrids as described on the previous pages.

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## Mopeds and operators

**Analysis on the vehicle level**

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# Up to 130,000 vehicles globally are covered in this report

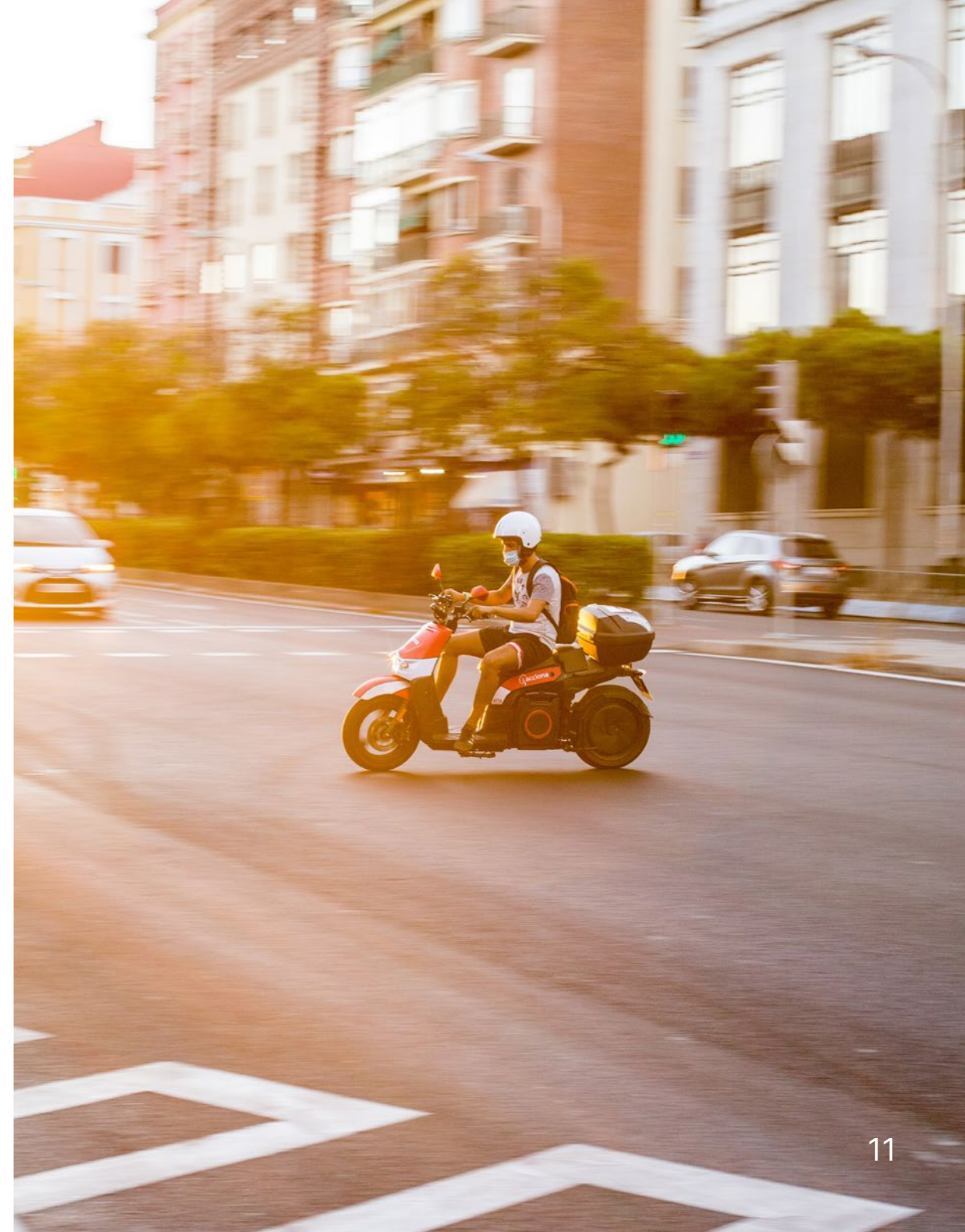
The world of shared mopeds, motorcycles and moped/bike-hybrids has never been bigger

2022 saw our biggest estimated count ever of shared mopeds in the above mentioned vehicle categories.

Our estimate for the number of shared mopeds globally, as of the report launch date, is at least 130,000. This number is up by 8% compared to our previous report in 2021.

Globally, 55% of shared mopeds are deployed in Europe. Europe stays the most important moped sharing market, but at the same time the industry is becoming increasingly global.

Also, this year we saw a rise in shared moped/bike-hybrids, which we consider as an independent segment in the moped sharing market (see pages 18-19), equal to classic shared mopeds and motorcycles.



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# A handful of operators own the majority of the global fleet

The biggest 10 own 61% of all shared vehicles in this report.

What do Acciona, Cooltra, felyx, GO Sharing, Yulu, or GoShare have in common? They are some of the biggest global operators (out of 94) and part of the global top 10 in terms of fleet sizes.

The top 5 operators own up to 37% of the global moped sharing fleet. The top 10 account for 61% of the global fleet.

Overall, the number of operators increased by 8%, or 7 operators in absolute numbers, compared to last year.



# From A to Z: Ten biggest moped sharing operators (alphabetically)



## First major sharing operations:

2018

## Markets:

Italy, Spain

## History:

Most of its expansion started in 2019/2020. Today, they own one of the largest European fleets. Owned by Acciona, a huge infrastructure enterprise.

## Selected news from last year:

Local expansions and further product improvements.



## First major sharing operations:

2015/16

## Markets:

France, Italy

## History:

One of the industry's early operators. Cityscoot started by focusing on the French market before entering Italy in 2019.

## Selected news from last year:

Launch in Turin, exit from Barcelona.



## First major sharing operations:

2016

## Markets:

France, Italy, Spain, Portugal

## History:

Cooltra is a pioneer of moped sharing. They have a huge customer base in many cities and achieved a high level of customer acceptance.

## Selected news from last year:

Fleet runs on Askoll mopeds now. Strong fleet growth.



## First major sharing operations:

2017

## Markets:

Belgium, Germany, Netherlands

## History:

First launched in 2017 in the Netherlands. Have since entered the Belgium and German markets.

## Selected news from last year:

Fleet expansion and increased utilization of the fleet.



## First major sharing operations:

2019

## Markets:

Taiwan

## History:

GoShare is the sharing platform of moped manufacturer Gogoro. Fast scaling in the second half of 2019.

## Selected news from last year:

Taichung launch of GoShare, overseas expansion of parent company Gogoro, went public through an IPO.

# From A to Z: Ten biggest moped sharing operators (alphabetically)



## First major sharing operations:

2019

## Markets:

Belgium, Italy, Netherlands, Turkey

## History:

GO Sharing started in their home market of the Netherlands before scaling internationally. Became a multimodal operator by introducing bikes and cars as well.

## Selected news from last year:

Launch in Turkey and acquisition of Italian operator ZigZag Sharing. Exit from Germany.



## First major sharing operations:

2019

## Markets:

Taiwan

## History:

Its strength is in its origins in carsharing leading to its multimodal fleet.

## Selected news from last year:

Growing the customer base.



## First major sharing operations:

2018

## Markets:

USA

## History:

Revel dominates the US market and constitutes one of the largest non-European global fleets.

## Selected news from last year:

Growing the customer base.



## First major sharing operations:

2016

## Markets:

Taiwan

## History:

First moped sharing operator in Taiwan. Huge fleet in metropolitan area of Taipei.

## Selected news from last year:

Launched a new vertical called WeMo RenTour, a tourism-focused rental arm.



## First major sharing operations:

2018

## Markets:

India

## History:

Yulu offers different EVs in their markets including the Miracle and more recently the Dex. Currently available in Bangalore, Mumbai and Delhi. Their main national competitors are Vogo and Bounce.

## Selected news from last year:

Yulu received an investment of 77M USD. The company plans to greatly increase its fleet size and aims to launch in additional Indian cities.

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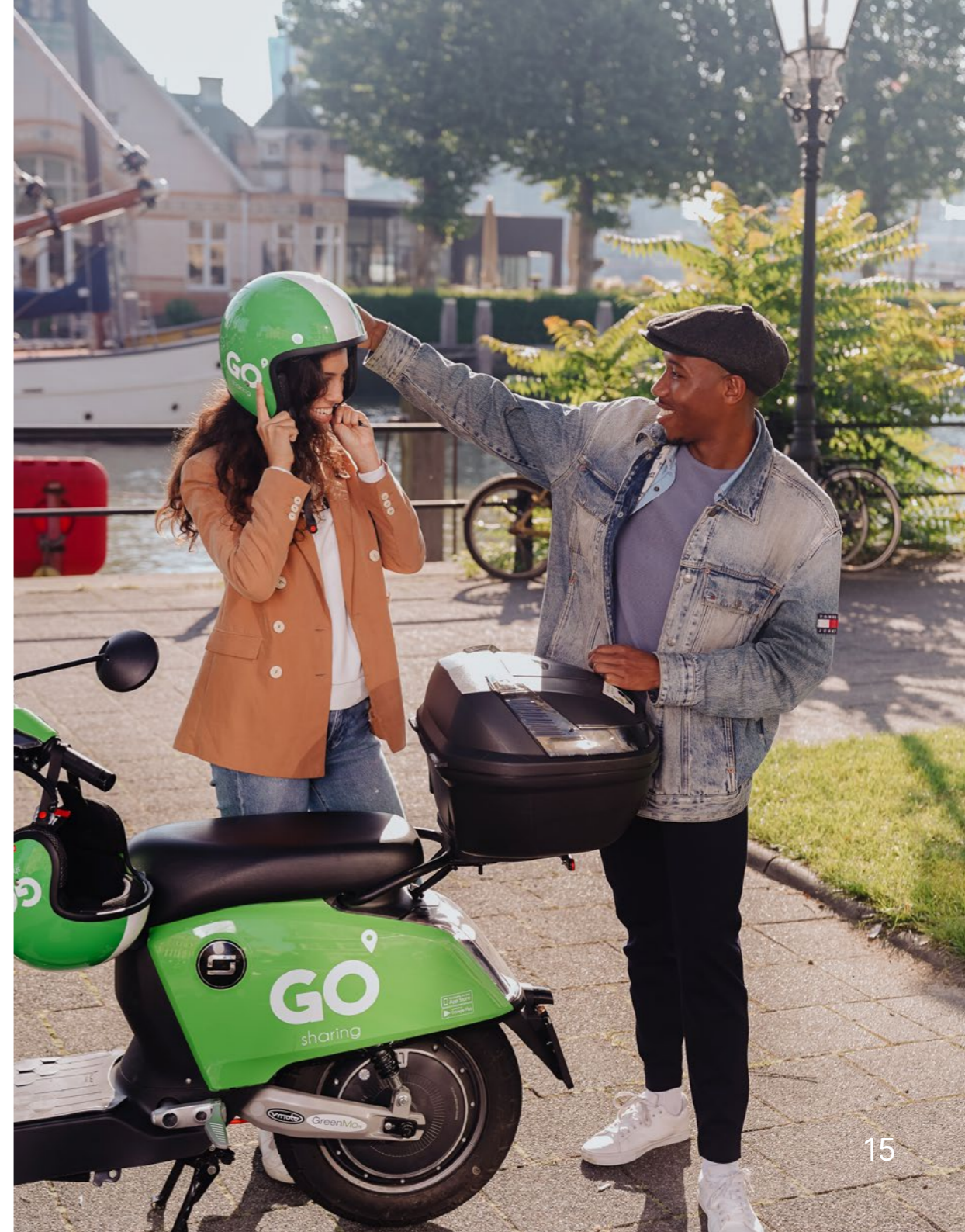
## Vehicles from >40 operators are deployed in moped sharing

The most widespread individual vehicle brands for sharing are NIU, Vmoto, Kymco, Silence, and Gogoro. Some more runner-up manufacturers are namely Askoll, Govecs, Honda, emco, IMF, Yadea, Pink Mobility, Segway and at least 27 other OEMs.

Approximately 16% of the global fleet analyzed in this report are moped/ bike-hybrids. The biggest moped/ bike-fleet is operated by Indian operator Yulu.

9% of the global moped sharing vehicles can ride faster than 45-50 km/h and are motorcycles with some of the top suppliers being Silence, SEAT and Yamaha.

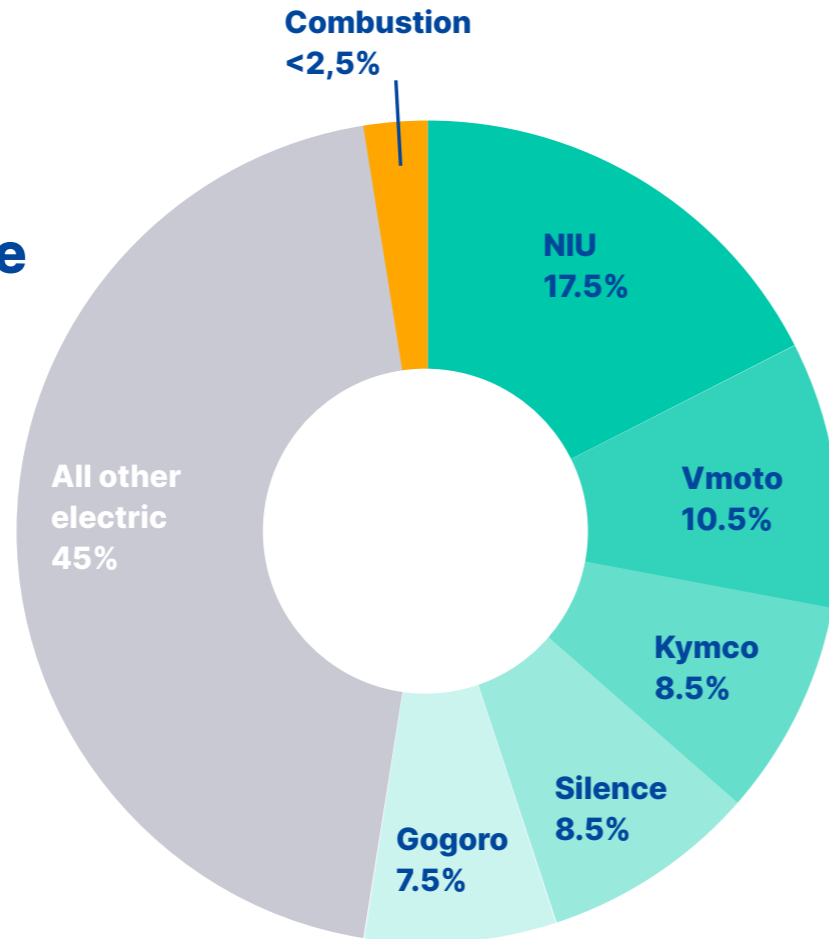
Electric mopeds dominate the market and account for approximately 97% of vehicles in moped sharing.



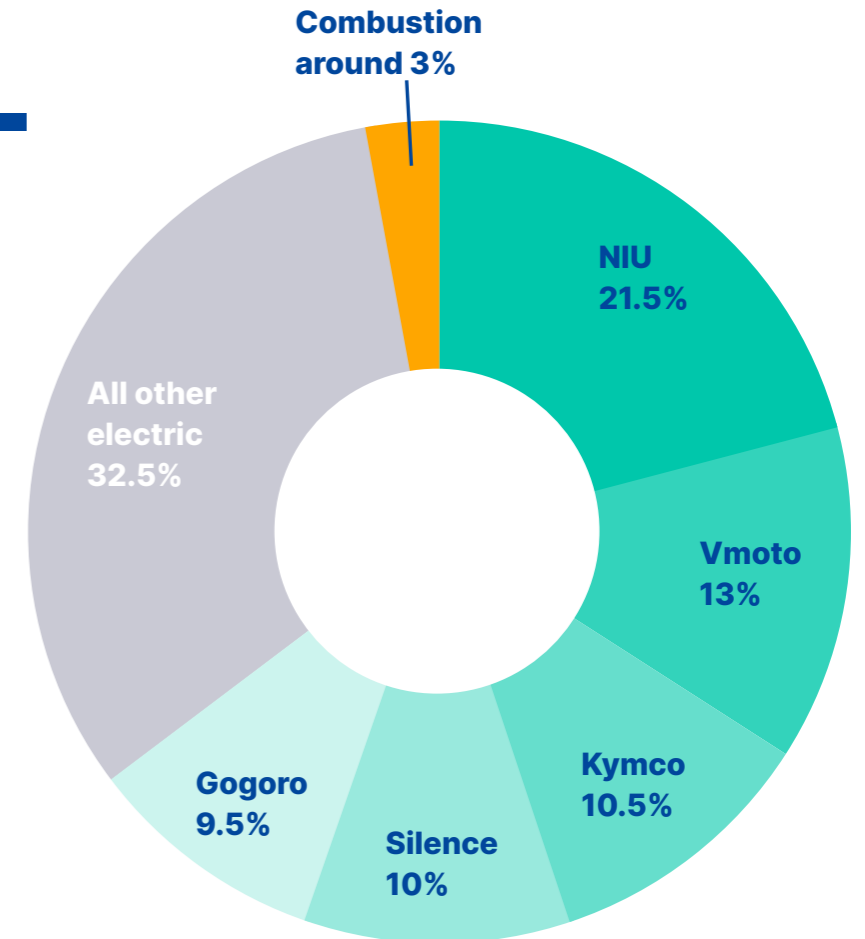
# Moped sharing is electric

At least 97% of the global shared moped fleet is electric!

## L1, L3 and moped/bike hybrids



## L1 + L3 only



Note: The charts name the top 5 known vehicle manufacturers and the share of all other electric and combustion vehicle manufacturers. All of the top 5 supply only electric mopeds or motorcycles to the industry. All values are rounded by 0.5. L1-class covers mainly classic mopeds, L3-class covers motorcycles. Our definition of the classes for this report can be found on page 7.



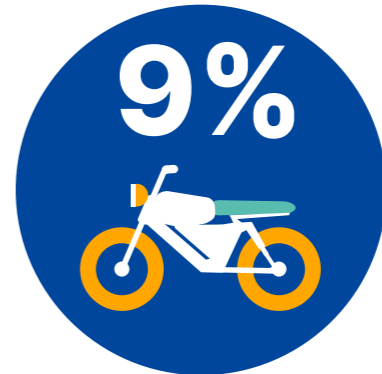
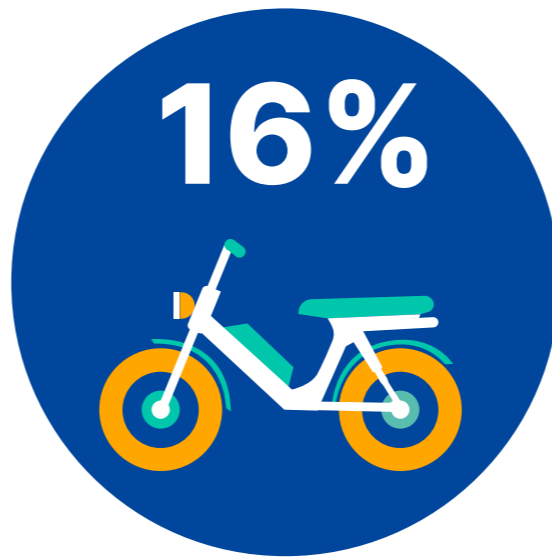
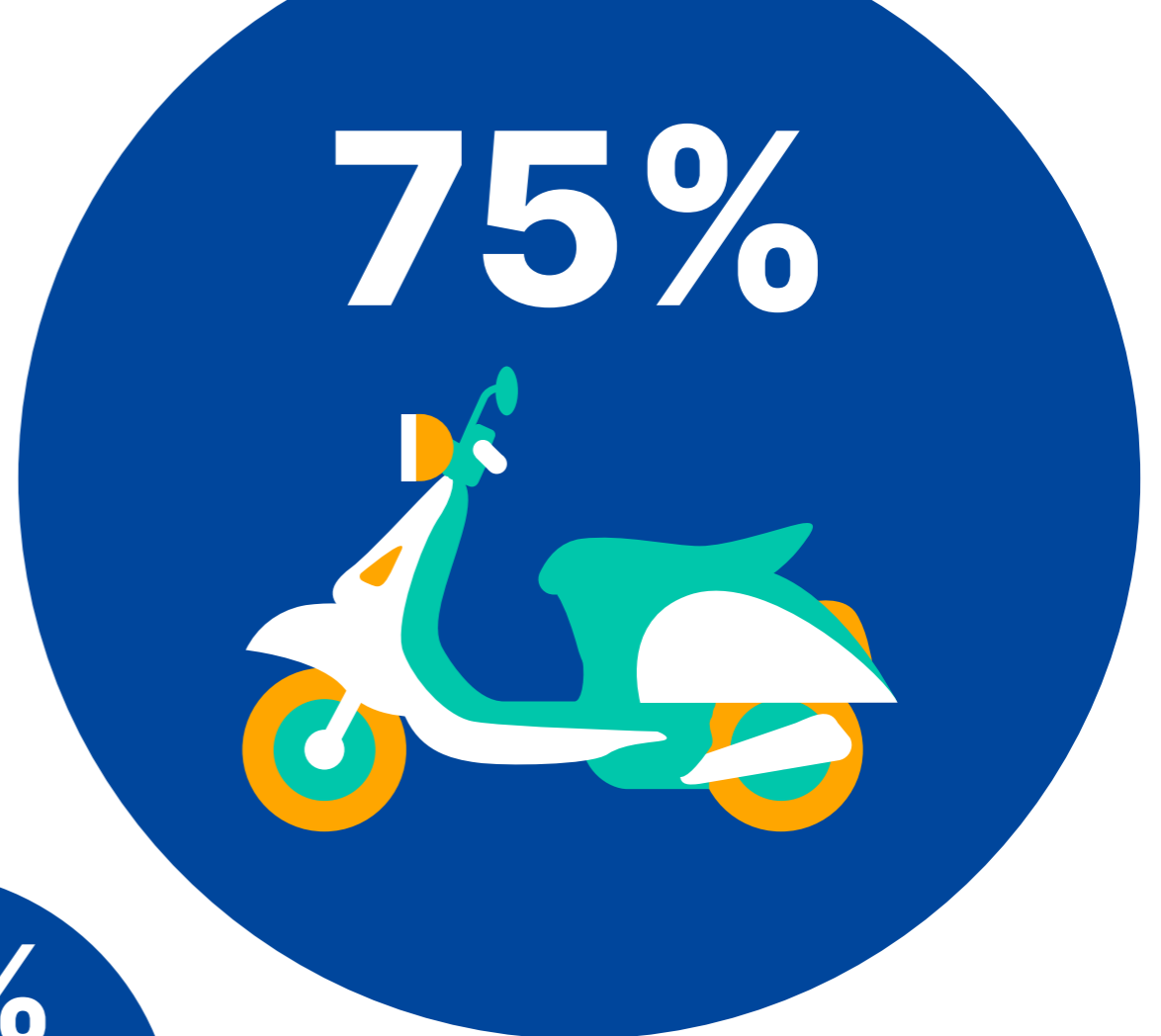
# 75% of the market is comprised of classic mopeds

16% are moped/bike-hybrids, 9% motorcycles.

Among all the shared, motorized two-wheelers that we could identify, 75% are classic mopeds, 16% are moped/bike-hybrids, and 9% are motorcycles (L3-class).

The major L1-markets are Europe, Taiwan and the US. The L3-class is found almost exclusively in Europe. Moped/bike-hybrids tend to be deployed more in Asia (e.g. India, Pakistan and Indonesia), but are also a new phenomenon in other markets such as the US and few small pilots in Europe.

One of the major differences is the maximum vehicle speed. While mopeds can often reach around 45-50 km/h, motorcycles are faster, while moped/bike-hybrids drive usually around 25-35 km/h.





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## Moped/bike-hybrids are emerging

These vehicles now merit a separate section in this report.

If we think of moped sharing we often think of a Vespa-like 45-50 km/h vehicle. Mandatory helmet and driver's license, riding on the street along with cars. But this definition is becoming blurred in shared mobility. Two-wheeler sharing is increasingly seeing vehicles that can't be placed exclusively in the moped or bike sections. For now, we at INVERS sometimes call these vehicles "moped/bike-hybrids" or sometimes "light mopeds".

This year, we already identified more than 20,000 of these moped/bike-hybrids in sharing operations.

It's clear that more markets (especially beyond Europe) are deploying hybrid mopeds close to a classic moped sharing use case. This segment is gaining popularity and growing in size.

# 5 prominent examples of moped/bike-hybrid operators



## Introduction of moped/bike-hybrid:

2018

## Market:

India

## Description:

Yulu offers different EVs in their markets including the Miracle and more recently the Dex. Currently available in Bangalore, Mumbai and Delhi. Their main national competitors are Vogo and Bounce.

Yulu received an investment of 77M USD. The company plans to greatly increase its fleet size and aims to launch in additional Indian cities.



## Introduction of moped/bike-hybrid:

2018

## Market:

Indonesia

## Description:

Migo is an Indonesian shared mobility operator focusing on moped/bike-hybrids. The company is seeing a high demand since service inauguration and significantly developed the Indonesian market for moped sharing.

One of their national competitors is Beam Mobility that launched their first moped/bike-hybrid in Indonesia in 2022.



## Introduction of moped/bike-hybrid:

—

## Market:

USA

## Description:

The company is active in multiple US cities and runs a mixed fleet of bikes, kick scooters and hybrid vehicles such as the Cosmo, and the Cosmo-e (both vehicles combine characteristics of a moped and a bike). With the Apollo and the Cosmo 2, they are working to launch two new hybrid vehicle types in the near future.



## Introduction of moped/bike-hybrid:

The Lime Citra was introduced in 2022 after phasing out L1-class mopeds earlier. Currently available in Long Beach, USA.

## Market:

USA

## Description:

Lime is mainly known for its kick scooters and e-bikes, globally. The Citra launch in Long Beach is a unique service and we'll curiously follow any learnings and insights from the pilot.



## Introduction of moped/bike-hybrid:

2021 or 2022

## Market:

Turkey

## Description:

Marti is currently preparing to go public at the NYSE. They introduced a fleet of mopeds and moped/bike-hybrids in selected Turkish cities along their fleet of thousands of kick scooters. Marti aims at becoming a local superapp.

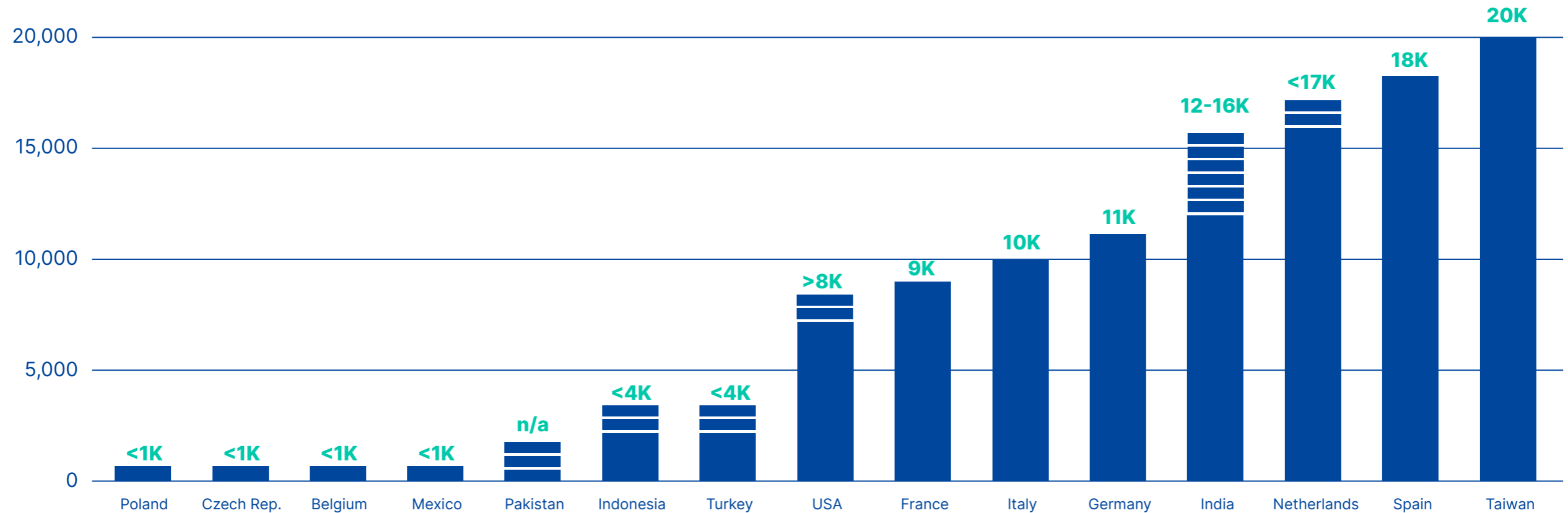
# 3

## Regional distribution

Where can we find moped sharing?

# Taiwan, Spain, and the Netherlands are the biggest markets

Turkey, Indonesia, and Pakistan are new in the top 15



Info: All values are rounded national aggregate estimates. There are higher uncertainties especially for the fleets in India, Turkey, Indonesia, USA and Pakistan due to missing or conflicting data (marked as stripped bars). Additional (but smaller) fleets are deployed in Austria, Bolivia, Brazil, Bulgaria, Cambodia, Cyprus, French Polynesia, Georgia, Greece, Hungary, Latvia, Lithuania, Malta, Paraguay, Portugal, Romania, Russia, Slovakia, Switzerland, Ukraine, and the United Kingdom. We couldn't confirm the fleet estimate for the fleet in Pakistan. All vehicle type classes described in our intro were included.



## Most growth took place in non-European markets

India, Indonesia, Taiwan, are some of the countries that have bigger fleet sizes than in 2021

Europe has been the dominant moped-sharing market for many years, and 55% of the global fleet is still located there. Nonetheless, we see more non-European countries introduce moped sharing over recent years. The characteristics of the business models sometimes differ: for example, moped/bike-hybrids are mostly seen outside Europe.

Three notable moped sharing countries outside Europe include:

- **India** is one of the top five global markets and Bangalore remains one of the world's biggest moped sharing cities.
- **Taiwan** keeps on introducing more mopeds year after year. Despite of a population of just below 24 million, Taiwan has the biggest moped sharing fleet globally with almost 20,000 vehicles.
- **Indonesia** is newly covered in our report this year (compare next page) and is seeing a wider introduction of moped/bike-hybrids from operators like Migo and Beam.

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## New country listings

For example Bolivia, Greece, Paraguay, Switzerland, Turkey, and the UK

For this report, we found, listed and analyzed nine additional active country markets than in the previous report. Bolivia, Greece, Paraguay, Turkey, and the UK launched moped sharing for the first time during the past 12 months, while other markets started small fleets more than one year ago, but were added to the study just this year (Indonesia, Lithuania, and Pakistan). Switzerland re-appears on our moped sharing radar.

On the following pages, we will dive into the five biggest moped sharing regions: Western and Southern Europe, Taiwan, North America and South Asia.



# An introduction of the five regional centers of moped sharing

Western Europe, Southern Europe, Taiwan, South Asia and North America.



**Western Europe**  
growing



**Southern Europe**  
stable



**Taiwan**  
growing



**South Asia**  
growing



**North America**  
growing

Four of the five top market regions grew during the report study period. Substantial growth in South Asia (fleets in India and Pakistan) was due to the inclusion of the new moped/bike-hybrid category in this report.

Southern Europe (fleets in Spain, Italy, Portugal, Malta, Cyprus and Greece) remained stable. Western Europe (fleets in the Netherlands, Germany, France, Belgium, Austria, UK and Switzerland) is the largest among the analyzed regional markets.

In North America (fleets in the USA and Mexico), the main moped sharing market is the USA. The USA growth came mainly from moped/bike-hybrids.

In contrast, the Taiwanese fleet growth was due to classic mopeds. Taiwan holds the crown for being the biggest national market among all moped sharing nations (they took the crown from last year's leader - Spain).

*Info: We estimated the aggregated regional fleet sizes based on public information and direct operator info. Higher uncertainties of the exact fleet size numbers for North America and South Asia due to data availability of few individual operators.*





# Western Europe

Fleets in France, Germany, the Netherlands, Belgium, Austria, Switzerland and the UK.



**38-40K**  
Fleet size



**up to 100**  
Cities



**35**  
Operators

Western Europe is the biggest aggregated moped sharing region in our study. Netherlands and Germany, two of the global top 5 countries can be found there.

In Paris, one of the top 5 global moped sharing cities, stakeholders are awaiting the final decision of the local moped sharing tender results with great anticipation.

Other regional moped sharing hotspots are Berlin and Rotterdam.

## Major developments:

- The Netherlands saw the most vehicle additions among any national moped sharing fleet.
- The well-developed German moped sharing market saw a small decrease in fleet size.
- The UK is on our radar for the first time.
- France is awaiting the Paris tender decision.



# Southern Europe

Fleets in Spain, Italy, Portugal, Malta, Greece and Cyprus.



**28-30K**  
Fleet size



**49**  
Cities



**30**  
Operators

In Southern Europe, Spain and Italy are the moped sharing powerhouses. While Spain is the second biggest global moped sharing nation, Italy holds position #6 in the 2022 country ranking.

The main moped sharing cities are Madrid, Milan, Barcelona and Rome. According to Fluctuo data, Barcelona is the city with the most shared moped trips per capita in Europe. Milan on the other hand is said to be the European city with highest shared moped density.

## Major developments:

- Barcelona started to lay the foundation for an updated moped sharing governance framework.
- Greece saw its first small moped sharing operation.
- The overall regional fleet size remained stable (being one of the largest in the world), but the number of served cities increased greatly (+17 cities since last report).



# Taiwan

Outstanding moped culture, vehicle density, and the #1 global moped sharing capital Taipei.



**up to 20K**  
Fleet size



**8**  
Cities



**6**  
Operators

The Taiwanese market has been a major driver for the global moped sharing business for many years. Taipei is a buzzing center of the global moped culture and constitutes the largest moped sharing fleet globally. In other words: 7-8% of all the world's shared mopeds drive in the metropolitan region of the city. The three biggest national operators WeMo, GoShare and iRent are active in the city.

## Major developments:

- GoShare's moped sharing, Gogoro Smartscooter, and the Gogoro battery swapping platform merged to "One Gogoro Taiwan" in October.
- WeMo started a rebranding in late 2022.
- Gogoro went public at the NYC stock exchange in April 2022 and GoShare launched in Taichung (2nd biggest city in Taiwan).



# South Asia

Big Indian market and a new addition: Pakistan.



**up to 18K**  
Fleet size



**10**  
Cities



**5**  
Operators

One of the world's biggest moped sharing markets can be found in Bangalore. As discussed in last year's report, major Indian moped sharing stakeholders partially pivoted during the COVID pandemic towards long-term rental, subscription, B2C manufacturing and infrastructure solutions (e.g. battery swapping stations). However, all three major moped sharing players (see right) continue to serve user needs with slightly different service portfolios and therefore continue to develop the Indian micromobility market. Additionally, Pakistan's ezBike runs moped/bike-hybrids in Islamabad.

## Major developments:

- Yulu closed a Series B funding round and expanded its fleet. It's eyeing battery swapping expansion and new vehicle types.
- Chalo acquired Vogo and wants to bring the company to more Indian cities.
- Bounce invested into the B2C market and a battery swapping platform.



# North America

USA fleet size grew mainly due to new moped/bike-hybrids.



**at least 9.5K**  
Fleet size (estimate)



**Unclear**  
Cities



**5**  
Operators

Revel, the biggest regional player, runs services in four cities. Lime and Veo offer additional moped/bike-hybrids. The authors of this report couldn't confirm the number of cities with active moped/bike-hybrids.

Moped sharing cities include NYC, San Francisco, Miami and Washington DC, as well as many TIER-2 cities beyond the primary metropolises.

The Mexican market remains stable.

## Major developments:

- Revel maintains the biggest moped sharing fleet in the USA.
- Lime started a pilot with a moped/bike-hybrid called "Citra" (Long Beach). Earlier, they stopped offering L1-class mopeds.
- Veo rolls out more moped/bike-hybrids (Apollo and Cosmo), which serve moped-like use cases.

# 4

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## City-level analysis

**Which cities have the biggest fleets?**

# The top sharing cities are all around the globe.

Almost 30% of shared moped comes from the following five cities.

We would like to draw attention to some of the global moped sharing hotspots. The Taipei region (pictured on the right) is a buzzing center of the global moped culture and constitutes the largest moped sharing fleet among all >220 cities.

Madrid, Paris and Milan are currently the biggest European moped sharing cities with fleet sizes around 5-7.5K. Interestingly, 30% of the global fleet from this report comes from one of the following five cities.



**Taipei/  
New Taipei**  
Up to 10,000  
vehicles



**Bangalore**  
up to 8,000  
vehicles  
(estimate)



**Madrid**  
up to 7,500  
vehicles



**Paris**  
Up to 7,500  
vehicles



**Milan**  
Up to 5,000  
vehicles



# Who are our top 5 moped sharing cities?

Cities in Europe, Taiwan and India are setting benchmarks.



## Taipei/ New Taipei

Taipei is the global moped sharing hotspot. All three major national moped sharing operators are active in the metropolitan area. The **local moped culture is extraordinary.**

**Operators:** GoShare, WeMo, iRent



## Bangalore

Bangalore has always been in one of the top global seats when it comes to moped sharing. Since we **added moped/bike-hybrids** to our analysis this year, the city claimed the second spot.

**Operators:** Yulu, Vogo, Bounce



## Madrid

Madrid and Paris have similar fleet sizes and therefore both qualify for the title of the **largest European moped sharing fleet.**

**Operators:** Acciona, Cooltra, Cabify, GoTo



## Paris

Paris has been a moped sharing hub for a long time. Currently, the city is in the final stage of awarding operations licenses to three operators as part of a **tender** process.

**Operators:** Cityscoot, Cooltra, YEGO, Troopy



## Milan

Milano became a strong moped sharing hub in recent years and is one of the cities with most **competitors** among our global city dataset this year (based on number of operators).

**Operators:** Cooltra, Cityscoot, Acciona, GoSharing/ZigZag, Helbiz/Mimoto

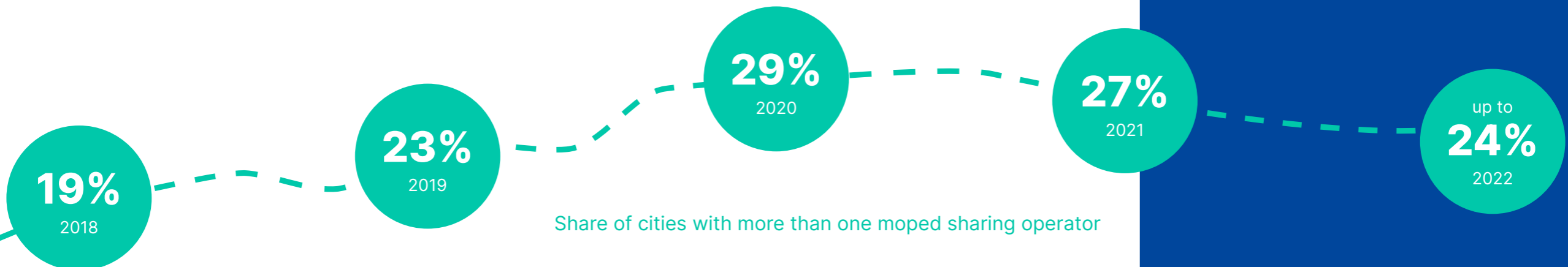


# One in four moped sharing cities sees competition

Many new smaller city launches slightly reduced the share of competition cities

The total number of cities with at least two moped sharing operators lies at 50 this year (similar to the 47 cities in 2021). We call them "competition cities". Analyzing >220 cities in total brings us to a **competition rate of 24%**, compared to 27% last year. This slight drop can be attributed to the continued rise of single operator cities among smaller TIER-2 and TIER-3 cities this year.

Don't be fooled: the level of competition in most metropolises is rising. The developments of Paris, Kaohsiung, Barcelona, or Milan are a good indicator of growing competition.



Share of cities with more than one moped sharing operator

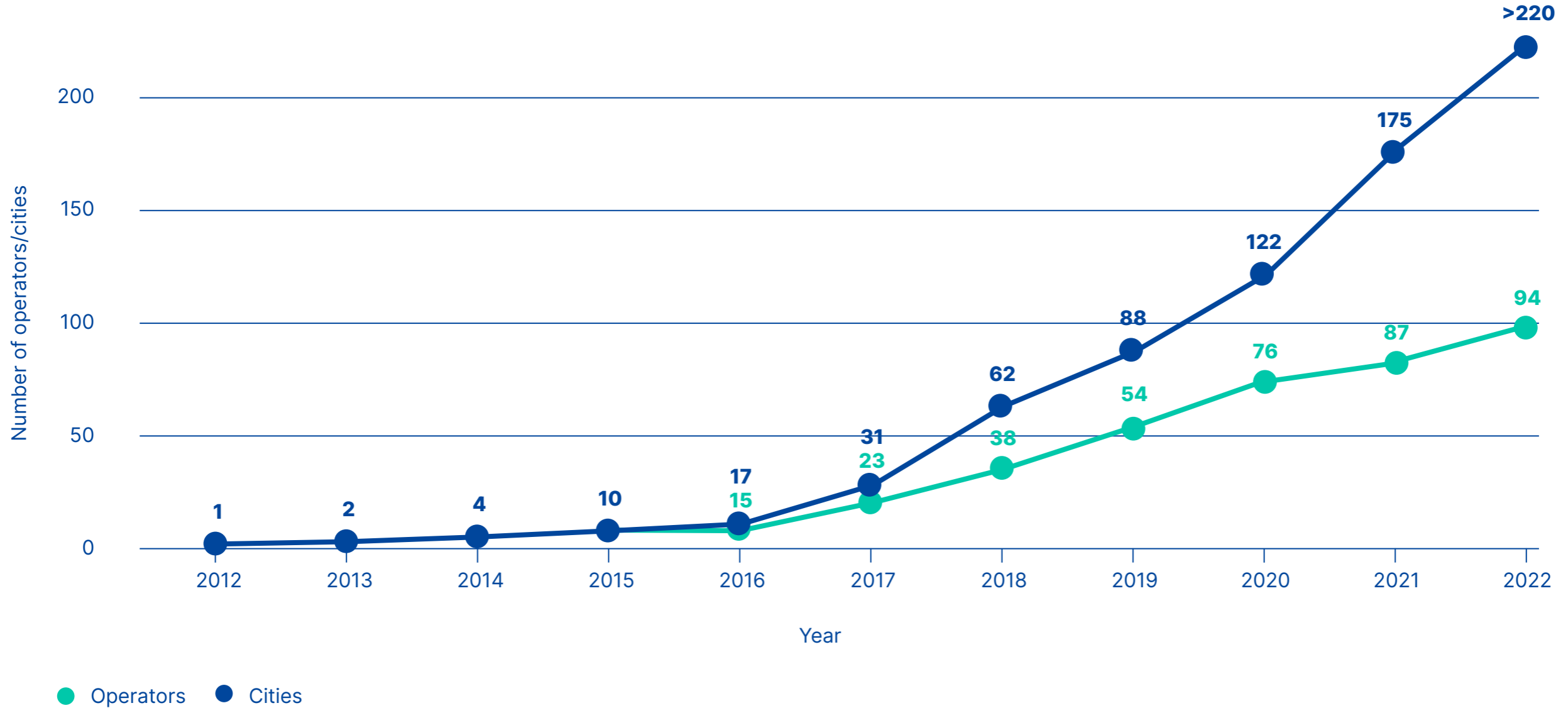
The level of competition in most metropolises is high

Top cities with most operators per city:

- Barcelona
- Kaohsiung
- Milan
- Florence
- Rome
- Madrid
- Paris
- Turin

# Record-high number of operators and cities

More operators aim at an ever-growing potential customer base



# 5

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## Users and usage

**Who is using the services and how?**



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# There are up to 17 million registrants across all operators

The moped sharing community is growing

We estimate that there are up to 17 million registered users as of August 2022. Since 2021, the number of registrations grew by up to 40%.

User registration statistics (either registered or active) are hard to obtain. Some operators publish numbers, others don't. That is why we asked the global operators directly.

We aim to give an estimate of the global registration numbers based on their numbers, along with public data sources and by interpolating missing statistics.

The number of people registering and using moped services has never been bigger.

*Note: Please don't interpret this number as 17 million individual users. The metric also includes inactive users and double registrations. One individual user could be registered with multiple operators in order to use the nearest service - that person would be counted multiple times as well.*

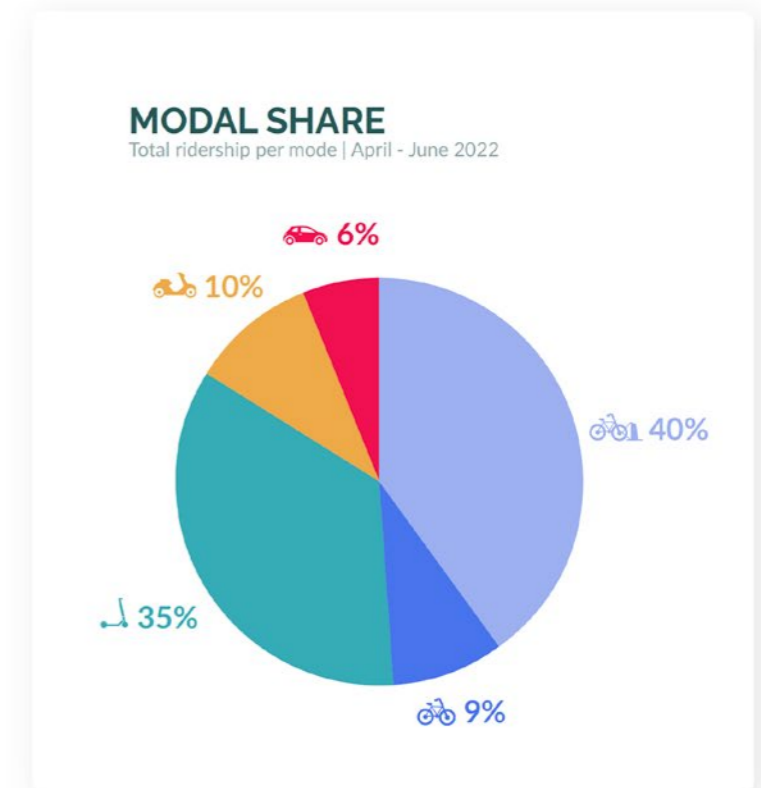
# Moped sharing ridership is growing strongly

+57% trip growth for mopeds in Europe

Fresh numbers from [Fluctuo's European Shared Mobility Index](#) show that the major European moped sharing cities saw trips increase by 57% over last year (Q2 2022 vs. Q2 2021). The European market accounts for more than half of the global moped sharing fleet.

10% of all trips in Q2 2022 in key European cities were made using shared mopeds, which is similar to the free-floating bike sharing market in the same time period.

Analysis by:  **fluctuo**  
Mobility enablement





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## Free-floating services dominate the industry

Only 1 in 20 global shared mopeds is from a station-based moped sharing operator.

Global moped sharing is run mostly through free-floating systems; **around 94% of all shared mopeds are free-floaters**. In those systems, users can pick-up and drop-off their desired vehicle anywhere within a defined service area as long as they obey local parking rules, and app-defined no-parking zones in parks, for example.

The majority of the few station-based shared mopeds are in Asia. At stationary systems, users can choose among a pre-defined number of pick-up and drop-off stations. All station-based shared mopeds account for approximately 6% of the global moped sharing fleet.

# 6

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## Expert interviews

Talking with the experts

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# Listening to moped sharing experts

We invited selected industry experts to share their insights.

The report is a joint effort of many people. Its findings make also use of the work of other report authors, operators, press, scientists and suppliers, just to name a few.

We talked to eight leading moped sharing experts from France, Germany, Georgia, the Netherlands, Spain, and Taiwan. They were chosen because of their expertise in the field and their knowledge of the do's and don'ts of moped sharing.

- We invited five of them to our **interview section**. These five interviewees are operational-level experts and hold expertise in very specific parts of the business such as sustainability, dynamic pricing, battery swapping, business development, and multimodality.
- Additionally, we invited another three C-level experts from the European moped sharing arena to our **digital panel discussion** at the launch of this report on November 8th 2022.







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## Clément Lauze

Sustainability officer at YEGO

YEGO is a moped sharing operator active in Spain and France. Clément is coordinating their sustainability efforts and actively aims at tracking the company's climate impact and ways to further reduce their climate footprint.

**Spotlight topic:**  
Sustainability

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### You are "sustainability officer" at YEGO. What is your task?

As sustainability officer, I have three main missions: First, measuring and understanding in the most accurate way, YEGO's impact on the environment, by gathering data from all departments. Second, acting upon those results, by setting ambitious objectives and targets, and reaching high standards of environmental performance, preferably guaranteed by labels and certifications. Thirdly, raising awareness in the company and outside, engaging employees in the sustainability journey, and making sure YEGO sticks to its commitment towards building a better future.

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### How do you track the climate impact of YEGO's activities?

We're tracking our impact with different metrics. At the company level, we use a carbon footprint tool to understand how our CO2 emissions evolve through time. We also follow a strict sustainability strategy in our daily activities and include

environmental and social aspects in every decision-making process. At the vehicle level, we calculated the Life Cycle Analysis of a YEGO moped. Thanks to months of work with partners from our entire supply chain, we tracked the life cycle of the moped from "cradle-to-grave", meaning from its production process to its end-of-life treatment.

---

### How much CO2 emissions does a moped ride cause at YEGO and how does this compare to private moped rides in your markets?

Thanks to 100% electric operations, powered by renewable energy, a YEGO moped emits (indirectly) only 15.4g of CO2 equivalent per passenger per kilometer. This number has been calculated with the support of EcoAct, certifying the reliability of the results. Driving a YEGO in a city like Paris thus emits up to 9 times less than a private combustion car and 5 times less than a private combustion moped.

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### What are the main CO2 emitters and how can you further reduce your climate impact?

Main emitters are the sourcing of raw materials and the production phase. For this reason, we are designing a new prototype of our moped, with a higher percentage of recycled materials and weighing 10 kilograms less. On a life-cycle basis, the best way to reduce emissions is to increase the lifetime of the vehicle, thanks to solid materials, preventive maintenance, and good care of the mopeds. Mopeds are one of the micro-mobility solutions able to fit 2 people. To reduce emissions per kilometer, we thus incentivize our users to ride accompanied, and thus reduce emissions per passenger.



## Daniel Doinitsin

Head of Business Development  
at Qari Electric

Qari Electric is a Georgian shared mobility operator serving its customer base with mopeds, kickscooters, microcars and shared bikes.

**Spotlight topic:**  
Synergies with other  
shared modes

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### **Tell us a little about your experience in offering shared mopeds in Georgia, the first moped sharing scheme in the Caucasus countries.**

It is an exciting and dynamic region. Everybody wants to see this kind of service. Cities are open to sharing systems. They are doing their best to promote the development of green transportation. The region has good climate conditions, and the operating season is long. The area is wholly adapted to cars. We are trying to break it. The youth was glad to see this service in the city and soon fell in love with Qari Electric. We are the lifestyle brand.

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### **In 2022, you introduced an electric micro-car into your fleet. What are major takeaways from your launch?**

Parking is a massive problem in Tbilisi, but this compact car fits everywhere. It is popular in wet weather, but the vehicle's flexibility remains a challenge. It can't compete with a moped during the summer season.

It has no air conditioning system and does not have many features or accessories, which is ideal in terms of operations but needs improvements for customer experience. It is good that this car can be easily charged with a "home plug" and does not need an electric car charger, which the region suffers a significant lack of. People like that they draw attention when driving an "Ami" (Citroën Ami, editor's note). This amazingly gorgeous car visually suits the urban environment very well.

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### **What share of your moped users have been using the microcar as well? Why do you believe it is a good addition to your existing moped fleet?**

We introduced the microcars this spring. This year will be the first off-season when we will see how the Qari Electric users have adapted to a change. About 15% of moped users have tried this vehicle, which I think is a small number, and we still have room for development. We want to fill the gap between seasons and

see possible alternatives. We started with a microcar, and we will introduce electric bikes any day now. Let's see what adventures lie ahead.

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### **How does your average moped sharing users differ from your car sharing users?**

If we compare microcars and mopeds, the distance traveled is about the same, but the travel time is twice as long for cars as for mopeds. This is probably due to traffic jams. There is a slight change in our terms of the agreement regarding age. Customers are allowed to drive a car from the age of 23. Therefore, if 16-34 old users dominate on a moped, 25-49 old customers are driving cars.



## Annanina Koster

Data scientist at felyx

felyx is active in the Netherlands, Germany and Belgium. Annanina works at their data science department and aims at improving the operations and their utilization rate.

felyx told us: "We are on a mission to connect people through green and shared rides. Therefore, our business revolves around ensuring there is always a fully charged and well-functioning moped available when our customers want to make a ride, while minimising our operational costs. The data & analytics team contributes to this goal with a variety of data science use cases."

**Spotlight topic:**  
Applying data science to  
your operations

### How do you increase operational efficiencies and increase customer value by means of data analysis?

Our data science efforts add value by automating large-scale and complex processes. However, our internal analytics ecosystem is equally important. We expose our millions of data points to all felyx teams with readymade charts, data marts, and detailed dashboards. We foster a data-enabled culture, and we actively democratise data by educating our colleagues in data literacy. Naturally, we adhere to all relevant data protection principles.

We would like to highlight three examples of how we achieve operational efficiencies using data science. First, we use predictive machine learning to schedule customer service agents, scooter support agents, and mechanics. Second, we employ prescriptive analytics to guide city managers' decisions in repositioning mopeds. Finally, our recommendation algorithms provide swappers with the fastest routes along empty mopeds that need full batteries.

Data science is also used to connect with our customers. To gain insights, we perform user segmentation based on ride behaviour, monitor retention, and predict the risk of churn. We feel equally responsible to optimise the use of public space and work together with the local government. To limit nuisance, our customers end their ride by taking a picture of their parked moped. This results in another opportunity to leverage machine learning: Identifying wrongly parked vehicles and providing proof when there is an offence. It enables us to offer a smooth experience for both our customers and the residents. Lastly, matching supply to demand is one of the core topics we are working on within the data & analytics team. One example is that we leverage dynamic pricing to properly distribute our fleet.

### How does your dynamic pricing approach work?

Our customers enjoy the freedom of parking anywhere in our service area. Of course, some areas experience higher demand than others. Ideally, we would move mopeds from low-demand areas to high-demand areas. Moreover, mopeds that linger longer are at a higher risk of being vandalised or being a nuisance. Our dynamic pricing engine engages our customers and motivates them to take the right actions, by giving free minutes if they park in high-demand areas and giving discounts for mopeds in less popular areas.

Our machine learning system estimates the idle time and expected revenue of a moped based on various internal and external data sources, from information about the state of the moped, and the location where it's standing, to demand and the weather forecast. The real-time engine uses these forecasts, statistics, and business logic to assign the right discount to the right mopeds at the right moment.



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## José Aritio Muñoz

Business Development/  
Expansion at Acciona Mobility

Acciona Mobility launched their first moped sharing service in 2018 and is currently active in Spain and Italy. They own one of the largest European fleets and run and own motorcycles from Spanish manufacturer Silence. We discussed moped sharing expansion possibilities with José.

**Spotlight topic:**  
Business development

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### Can you name three city characteristics that indicate it could be a good moped sharing market?

Potential population, traffic congestion and population density.

The potential population variable should not depend only on the number of people in a certain area, but on the foreseeable demand for motosharing services.

This demand depends on the economy, traffic circulation, local public transport system, and also on local mobility culture factors among others.

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### You offer your service in tourist-oriented cities like Gandia and Sotogrande. What are major takeaways from your experience there?

Some of the cities where we operate have lower activity during summer months. A couple of years ago we decided to move part of our fleet from these cities to summer destinations with greater tourist presence.

Redeploying part of the fleet to Summer cities is worth it as long as the following conditions are met:

- If the billing per motorcycle in the summer city is greater than the billing per motorcycle in the origin city in July and August.
- If the increase in the turnover of the Summer city in comparison to the origin city is big enough to compensate for the additional costs incurred in opening a new city. These costs are mainly: warehouse rental and motorcycle transport.

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### What potential do you see in expanding your existing city service areas to additional districts and suburbs?

We believe that expanding the service to municipal areas of cities where we already operate can be beneficial for the mobility needs of the citizens of these areas. We offer an alternative means of transport to private combustion vehicles, allowing users to move in an efficient and sustainable way. Users can combine their trips on public transport with our motorcycles to reach their destinations.



GoShare is a Taiwanese moped sharing operator and the sharing platform of moped manufacturer Gogoro. Currently they offer around 7,000 shared mopeds and excel in enabling user-based battery swaps at GoStations all around Taiwan.

**Spotlight topic:**  
Battery swapping

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### **How does battery swapping at GoStations work for GoShare users?**

GoShare users can check GoStations near them on the GoShare App and simply let the app guide them to one. They can quickly swap out a used battery for a new one at a GoStation. For each swap, they receive NT\$20 coupons immediately on the App.

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### **What share of your battery swaps are done by GoShare users (in contrast to your in-house swappers)?**

More than 70% of GoShare's battery swaps are completed by GoShare users.

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### **How many GoStations can your users currently find in your business area and how many user-based battery swaps are done in a year?**

There are around 1,700 GoStation in GoShare's seven operating cities, and there have been more than 900,000 battery swaps completed by GoShare users.

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### **Who is a typical battery swapper within your customer base? Can you show us some user stats?**

Mostly commuters aged between 26 and 35.

# Explore our report launch panel discussion online

Leading industry experts share their thoughts

As part of this report's launch, we discussed moped sharing market developments and trends with a handful of leading European operators. Discussion topics included the Dutch, French, and Spanish markets, multi-modality, competition, and profitability.

The full panel recording is available on our [blog](#).



**Oriol Marimon-Clos Sunyol**  
General Manager B2C



**Paul van Merrienboer**  
Managing Director



**Bertrand Altmayer**  
CEO



**Enrico Howe**  
Senior Market Researcher



# 7

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## Trends

**Five of the top trends within the moped sharing market**

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# Moped sharing trends of 2022



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**Moped/bike-  
hybrids**



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**Diversification**



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**Multimodality**



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**Sharing meets  
delivery**



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**Market  
concentration  
and takeovers**





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### **Trend 1: Moped/bike-hybrids continue to serve new markets**

Legally a bike, visually a moped. Moped/ bike-hybrids are on the rise and often address needs of communities with many people without a driving license (e.g. in India or Pakistan). Most have a top speed of around 25-35 km/h. However, the ride experience can be compared to that of a moped.

#### **Examples:**

- Check out our five operator examples on page 19 and our background story on page 18.



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### **Trend 2: Diversification**

Some operators chose to adapt their core business models. The main motivations behind model diversifications are new opportunities and risk reduction. Some operators adapted by adding subscription or long-term rental options into their fleet.

#### **Examples:**

- Subscription (e.g. Cityscoot)
- Long-term rental (several operators)
- Charging networks (e.g. Indian players)
- Interest in vehicle manufacturing (e.g. Bounce)



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### **Trend 3: Multimodality**

By now we witness that many of the major global moped sharing operators run different vehicle types beyond their moped business that can include cars, bikes or kick scooters.

#### **Examples:**

- Cooltra also has e-Bikes
- CHECK offers kick scooters
- GO Sharing bikes and cars
- Revel also offers ridesharing
- Yulu also runs bikes



#### **Trend 4: Sharing meets delivery**

We're seeing an increased interest of operators in offering dedicated solutions for delivery businesses.

#### **Examples:**

- Increased fit for delivery workers in existing B2B/B2C moped sharing solutions
- Full focus on delivery fleets such as in the case of HumanForest (London, UK)



#### **Trend 5: Takeovers and market concentration**

The top 10 operators own 6 out of 10 global shared mopeds (or in other words: 11% of the operators own 60% of the global fleet).

#### **Examples:**

- emmy was bought by GoTo in 2021.
- GO Sharing acquired Italian operator ZigZag.
- Helbiz acquired Italian operator MiMoto.

# 8

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## Summary

**Main takeaways**

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# Summary

## What to take from this report?

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All major KPIs in the moped sharing market such as the number of users, mopeds, cities, countries, or the electrification rate continued to grow.

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We estimate that up to 17 million users are registered for moped sharing services in 2022.

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There are now approx. 130,000 shared mopeds available globally.

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75% of shared vehicles in this report are classic mopeds, 16% moped/bike-hybrids, and the remaining 9% motorcycles.

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Moped sharing is available now in at least 220 cities in 36 countries across the globe.





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## Summary

### What to take from this report?

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Taiwan, Spain, and the Netherlands have the largest fleets.

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More than every second shared moped (55%) is deployed in Europe. The other main markets are Taiwan, India, and the USA.

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The vehicle manufacturers with the highest market share in the sector in 2022 are NIU, Vmoto, Kymco, Silence and Gogoro.

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We identified almost 100 global moped sharing operators. And one in four cities they operate in are contested markets with more than one operator.

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Moped sharing continues to be electric! At least 97% of deployed vehicles run with an electric engine.

# 9

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## About

**Research method, other reports,  
and the authors**

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# Applied methods

How we gathered and compiled the information in this report.



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## Desktop research

We researched publically available resources on the operators with a focus on city-specific fleet sizes, used vehicle types, brands, engine types, operations type (free-floating vs. station-based), and other details, facts and figures.



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## Talking to the operators

We reached out to the majority of global moped sharing operators to confirm fleet statistics, active cities, registration numbers, and their view on the market.

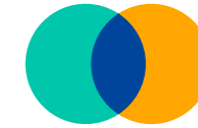


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## Interviewing additional experts

For the 2022 report we talked to more than 20 additional experts. They include...

- University researchers
- Mobility associations
- Moped OEMs
- Vehicle sharing suppliers
- Individual country experts



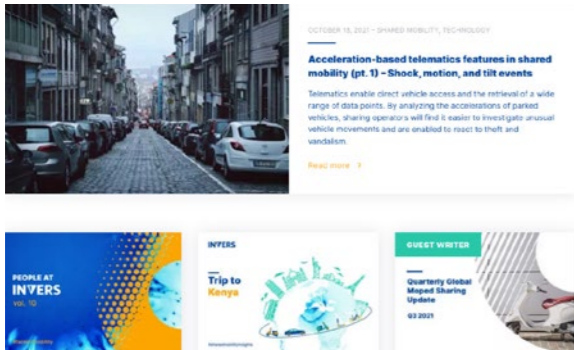
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## Comparing and fact checking with neutral data sources

- This year, we used data from [Fluctuo](#) City Dive platform for fact checking and to grant us a view into their shared mobility insights from Europe.
- Additionally, we are grateful for the work of an increasing number of national shared mobility associations and their additional data input.

# More research from INVERS

A strong knowledge-base for all industry-related topics and trends.



## INVERS Blog

Stay up to date on the latest shared mobility industry trends, insights and information through our inspiring blog articles, expert interviews, guides, and more.

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In August 2022, we launched our first barometer on the European Car Subscription market. You'll get a great starter-kit for the sector with data points, interviews, and overviews of related reports.

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# About the authors

Introducing **INVERS**

This study is conducted by INVERS, the inventor of automated vehicle sharing, who supports shared mobility operators worldwide to launch, operate and scale their fleet reliably. With its market-leading telematics and software solutions, INVERS enables the full automation of the vehicle rental process through all phases of a rental (start, during, end, and outside of rental).

As the world's first shared mobility technology company, for nearly 30 years, INVERS has been laying the groundwork that every operator needs, by developing and reliably maintaining the fundamental building blocks of their tech stack. By doing this at scale, INVERS offers their customers cost-efficient and easily implementable tech solutions.

INVERS acts as an independent and reliable partner for operators of services such as carsharing (free-floating and station-based), moped sharing, scooter sharing, ride pooling as well as car rental and subscription with the vision to make the use of shared vehicles more convenient and affordable than ownership.

Some of their customers include: Share Now, Clevershuttle, Miles, Getaround, Flinkster, TIER, imove, CARIFY, Cooltra and Emmy. INVERS was founded in 1993 and has locations in Siegen, Cologne and Vancouver. The product development takes place entirely in Germany.

**Together, we make mobility shareable.**

[www.invers.com](http://www.invers.com)

# Run your shared fleet, with INVERS' business- & vehicle-agnostic tech

INVERS has built a telematics and connectivity solution (CloudBoxx), specifically for the sharing use-case, that can help operators connect, run, and scale their fleet seamlessly.



## IoT Built for Shared Fleet

- Fully **vehicle agnostic** due to broad choice of I/Os.
- **Accurate vehicle positioning**, dead-reckoning calculations, & BLE Beacon technology.
- **Immediate vehicle access** due to low-latency & alternative vehicle access options (RFID/NFC card-reader).
- Trained Tier-3 **technical cross-functional support team**.
- **Fully GDPR compliant servers** hosted by INVERS
- **Indefinite warranty** (re-integration to other vehicles possible)



## Continuous Connectivity

- **Multi-band cellular connectivity** support.
- Integrated **multi-SIM technology** - connects to the carrier with optimal network availability.
- **LTE-M connectivity** - optimised for IoT with increased signal penetration, ideal for multi-region operations.
- **Bluetooth connectivity** - for low cellular network coverage e.g. underground.
- **24/7 server monitoring**, with emergency teams in various time zones.



## Fleet Data Insights

- **Event-based notifications** provides vehicle data in real time (e.g. tire pressure).
- **CAN Bus integration & listening**, second CAN-Bus connection for more vehicle data, e.g. door & ignition status.
- **Motion sensor**, detects shock & towing, alerts with calibration & threshold config options.
- **Driving behaviour analysis**, data on speeding, harsh acceleration, braking & cornering.



## Developer-Friendly API

- Built with a **developer-first approach**, open REST API for fast integration.
- **Detailed documentation** including code examples from common use-cases.
- **Easy customization** with the integration of third-party tools, on top of standard functions.
- **Deep CAN Bus integration** for custom workflows with an event-based structure.
- **Message queue** to consume any vehicle data.

Contact us >

# Imprint

## Project contributors:

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## Credits:

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- page 7: BeRider <https://www.be-rider.com>
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- page 52: Cooltra, COOLTRA MOTOS, S.L. <https://www.cooltra.com>
- page 53: felyx, felyx sharing B.V. <https://felyx.com>

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