

ConBici Herramienta climática

Bycycle accounts - 2024

Executive summary

Bicycle Accounts 2024

Executive Summary

ConBici Climate Tool
2024

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Table of Contents

What and what are the 2024 bicycle accounts for?	1
The bicycle counts more	2
Main magnitudes. a massive vehicle	3
Contributions of the bicycle to the just transition	6
Three novelties with their lights and shadows	11
Future scenarios for a more cycling country and how to achieve them	
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What and what are the 2024 Bicycle Accounts for?

This report offers an organized presentation of the main figures on bicycles and cycling mobility in Spain, covering aspects from market data, park usage, and infrastructure to the jobs they generate. It also includes their contributions to the just ecological transition compared to other means of travel in terms of greenhouse gas emissions, air pollution, noise, equity, etc.

The 2024 Bicycle Accounts have been prepared using an eco-integrative approach, characterized by understanding cycling mobility as a global cycle with different phases, ranging from the extraction of materials and disposal of energy sources to the construction of infrastructures, and through the manufacturing and maintenance of bicycles.

Another characteristic feature of this eco-integrative approach is that it measures the impacts of the global cycle through magnitudes specific to each value sphere. This means it generates a representation of the role of the bicycle in mobility through physical units such as emissions or energy consumption and social computing units, such as accidents or lives lost, without attempting to unify them through conversion into monetary units. In other words, it does not convert values such as life, diseases, or the environmental consequences of mobility into euros.

The 2024 Bicycle Accounts represent an effort to update those prepared by ConBici in 2022 and aim, as on that occasion, to begin representing the changes that are registered and will be registered in the evolution of cycling mobility in the coming years.

In that sense, this version of the report incorporates, in addition to updated data, several new features compared to the first edition, highlighting the inclusion of: the emergence of the electric-assisted pedal bicycle in the market and in use; the importance of intermodality for a change in the mobility model; the opportunities of cyclologistics and its labor challenges; cycle tourism and the role of the bicycle in the territorial debate opened with the claims of an emptied Spain.

The Bicycle Accounts are not intended to become a mere academic exercise that is repeated periodically but rather to become a tool to activate and value the role of the bicycle in the just transition. This means contributing to the path toward changing the current model of consumption and production, as well as its corresponding mobility and transportation model.

The document also offers a framework for reflection and support for the drafting of a new State Bicycle Strategy, once the period of validity of the one approved by the Government in June 2021 ends in 2025.

The bicycle counts more

In April 2024 the European Parliament, the Council and the European Commission proclaimed a Declaration¹ joint meeting on the use of the bicycle as one of the most sustainable, accessible, inclusive, affordable and healthy forms of transport and leisure, with the purpose of serving as a strategic guide for current and future policies and initiatives related to the use of the bicycle .

The European Declaration on the Bicycle bears the seal of the European Green Deal (2019), the central document of the just ecological transition policies of the European Union, which will have to be renewed after the formation of the new European Commission, once get Parliament going after the European elections in June 2024.

Numerous government actions of the European Commission linked in a more or less direct way to cycling mobility are derived from the Green Pact, such as the Sustainable and Intelligent Mobility Strategy² and the Action Plan for Zero Pollution³ which, for example, introduces a series of measures related to air quality that are part of the central debate of the new urban mobility model in which the bicycle can play a decisive role.

The 2024 Bicycle Accounts address the set of areas that constitute the framework of the European Bicycle Declaration, contributing to the

¹Published in the Official Journal of the European Union on April 3, 2024. C/2024/2377.

²*Sustainable and intelligent mobility strategy: channeling European transport for the future.* Brussels, 9.12.2020. COM(2020) 789 final.

³*The path to a healthy planet for all. EU action plan: 'Zero pollution for air, water and soil'.* Brussels, 12.5.2021. COM(2021) 400 final.

development of policies to promote the use of bicycles as a form of inclusive, affordable and healthy mobility. In particular, it takes into consideration the state of road safety and the creation of cycling infrastructure; the economy and employment of the bicycle; intermodality and cycle tourism.

Furthermore, the preparation of these Bicycle Accounts has confirmed, as occurred in its first edition, the enormous gaps in existing information, precisely what is claimed by the last chapter of the Declaration dedicated, precisely, to improving the collection of necessary data. to develop effective cycling policies.

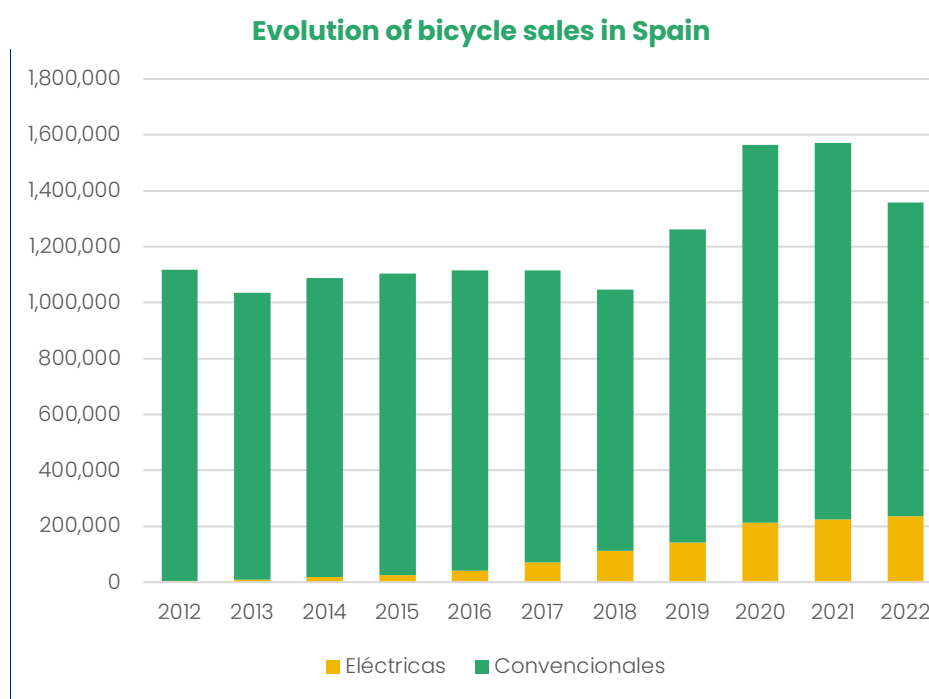
This new European context favorable to bicycles has been completed with the incorporation of cycling networks to the objectives of the TEN-T, the Trans-European Transport Networks. This incorporation was approved by the European Parliament at its April 2024 plenary session and has a relevance that should not go unnoticed. Indeed, once the adoption of the revised TEN-T regulation is completed, not only are active modes and long-distance cycling networks included in its priorities and objectives, but sustainable urban mobility plans become mandatory in the urban nodes that structure these European networks, which will stimulate the change in the mobility model and will also open opportunities for cycling.

From all these initiatives it can be concluded that in recent years the bicycle is consolidating a relevant role in European policies linked not only to mobility, but also to a set of areas related to the fair socio-ecological transition in which cycling mobility is a transversal factor, such as the environment, climate change, tourism, equity and health. Now, the bicycle counts more.

Main magnitudes. A massive vehicle

As in its first edition, the starting point of The Bicycle Accounts 2024 consists of obtaining an image of the use of the bicycle in Spain and its trends, starting from an important consideration, that of its relative universality as a means of transport in comparison with the car, a vehicle that is not accessible autonomously to more than 20 million people in Spain, simply because they do not have a license to drive it.

In this sense, the estimated bicycle fleet in Spain in 2022 reaches a figure of almost 38 million bicycles, compared to the slightly more than 25 million passenger cars registered in Spain in that same year, which makes it the most widespread vehicle. In our country. This is despite the fact that the sale of bicycles in Spain has slowed down in recent years, as proven by the figures published by the Association of Brands and Bicycles of Spain (AMBE).



Source: AMBE

The bicycle sales figures presented by AMBE confirm the sustained growth of electric bicycles. In 2023, sales totaled 241,000 units across various versions (mountain, urban, touring), representing 20% of all bicycle sales and, more significantly, 45% of the total turnover. This makes electric bicycles the best-selling electric vehicle in Spain and underscores their emergence as a significant factor in shaping future scenarios related to cycling, which are not without questions, opportunities, and challenges.

Regarding their usage, analysis of regional, metropolitan, and large city mobility surveys has allowed estimation of key variables that characterize daily cycling mobility. These include the number of bicycle trips, their percentage relative to total trips, and the distances traveled.

Estimation of the modal split, number of trips and km traveled in 2019 and 2022

		Modal share	No. Daily trips		Daily tours ⁴
			Totals	Per person	
	2019	1.33%	1.75 million	3.7 per 100 people	7.9 million km
	2022	1.67%	2.21 million	4.7 per 100 people	10.8 million km

The current use of bicycles can be perceived as disappointing or, conversely, hopeful. Despite significant growth in recent years, particularly in certain regions and cities, bicycles still account for a small share of daily trips (around 1.7%), which is notably low compared to other European countries.

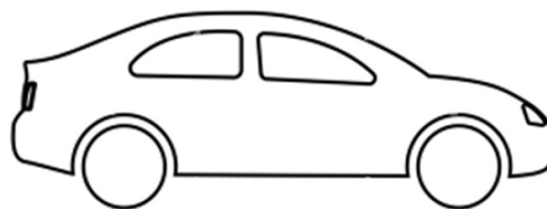
From another perspective, the data and comparisons with other countries also indicate tremendous potential for expanding bicycle usage across all regions and modes. For instance, many car trips, targeted for modal shift policies in line with comprehensive administrative strategies and plans, cover distances that are easily cyclable—daily journeys under 7 km—which could be replaced by walking or cycling.

Furthermore, another positive aspect is the observed normalization of bicycle use where rigorous cycling policies have been consistently implemented. This normalization is evidenced by increased participation of women and all age groups in cycling populations. In regions or cities with low bicycle usage, women comprise only about 25% of cyclists, whereas in areas with sustained cycling infrastructure, this figure ranges from 33% to 40%.

The Bicycle Accounts also examine the economic dimensions associated with cycling, including costs and economic activities within the sector. In terms of costs, the comparison with automobile expenses is particularly striking; the average acquisition cost of a car is 73 times higher than that of an urban bicycle and represents 82% of the average annual salary in the country (26,949 euros).

⁴To calculate the routes, an average displacement of 4.5 km per trip for conventional bicycles and 9.0 km for electric bicycles has been considered.

Comparison of the acquisition costs of city bicycles and average cars in 2022



Bici urbana	305 €	x 73 veces	Automóvil	22.176 €	Precios medios
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Source: The bicycle sector in figures. 2023. AMBE and Registration Tax Statistics of the Tax Agency of the Ministry of Finance.

In the same vein, maintenance and repair costs of bicycles are significantly lower compared to vehicles, as bicycles do not incur fuel expenses. This underscores that bicycles are the most economically accessible vehicle for the population.

In terms of economic activity, the Bicycle Accounts provide a comprehensive overview. In 2023, Spain boasted 189 national manufacturers of bicycles, components, and accessories. These entities collectively produced 301,125 bicycles valued at 245.5 million euros. Additionally, there were 3,111 stores specializing in bicycle sales, repair, or rental, generating a sales volume of 2,714 million euros, with 48% attributed to complete bicycle sales. Overall, the manufacturing and marketing of bicycles and their components support nearly 24,500 jobs across Spain. This figure does not include employment associated with other professions and sectors linked to cycling, such as cycling tourism, technical support, and training roles.

Contributions of the bicycle to the just transition

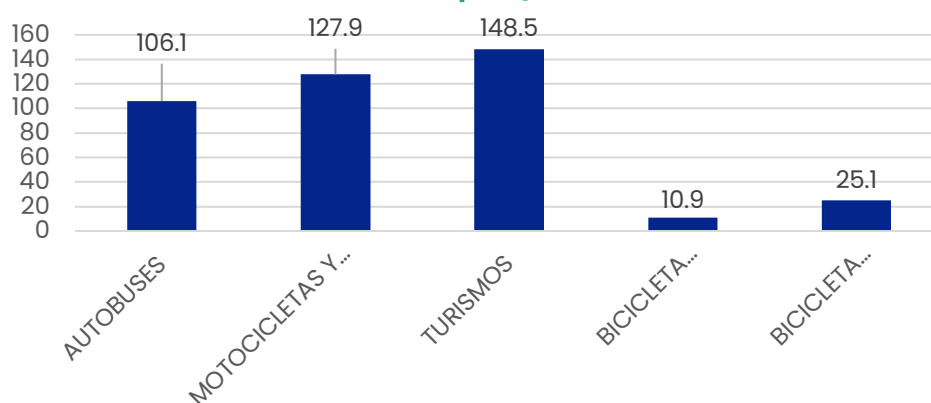
The Bicycle Accounts also highlight the bicycle's contributions to the just transition, emphasizing its benefits in both environmental and social contexts.

Firstly, the Bicycle Accounts confirm the bicycle's role in mitigating climate change, with significantly lower emissions compared to motorized vehicles across the entire travel cycle. Specifically, for modes of transport catering to people, bicycle emissions (220 kt CO₂-eq) constitute only 0.2% of all greenhouse gas emissions from these modes (109,166 kt CO₂-eq), when

emissions associated with infrastructure construction are excluded (often carried out simultaneously).

This comparison is influenced by the volume of trips made by each mode, which is substantially higher for road-based transportation. However, the bicycle's effectiveness in reducing greenhouse gas emissions becomes evident when comparing unit emissions (g CO₂-eq/km). Here, both conventional and electric bicycles demonstrate significantly lower emissions per person-kilometer compared to road-based modes of transportation for people, showing reductions of 7% and 17% respectively compared to passenger cars:

Greenhouse gas emissions per person transported by mode of transport (in g CO₂-eq/km)



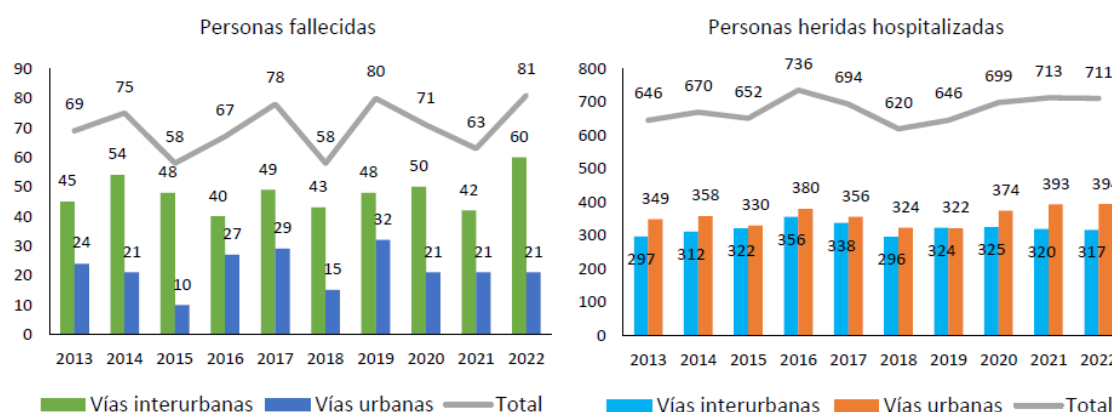
Furthermore, the Bicycle Accounts underscore the bicycle's role in reducing air pollution and noise when it replaces motorized travel. Additionally, they highlight the bicycle's contribution as a mode of active travel promoting a healthy lifestyle, which reduces the risk of diseases associated with sedentary behavior.

Based on current usage statistics, it is estimated that 359 premature deaths are prevented annually due to the physical activity associated with cycling. This number could potentially triple in the future if bicycle usage increases accordingly.

Another critical aspect examined by the Bicycle Accounts is the accident rate and public perception of safety regarding cycling. According to surveys on cycling mobility, safety concerns consistently rank as the primary barrier to increased bicycle usage. This analysis begins with the record of road

accidents involving bicycles, with official figures indicating a somewhat unstable but overall increasing trend.

Evolution of deaths and injuries hospitalized by bicycle in Spain (2013–2022). Urban and interurban roads



Fountain. The main figures for road accidents. Spain 2022.

However, when these figures are contextualized within mobility variables—analyzing them in terms of risk—the statistics for cycling accidents have shown moderate improvement over the past decade. There has been a nearly 41% reduction in the risk of death and a 26% decrease in the risk of serious injuries from 2010 to 2022:

Estimation of the risk of cycling mobility (2010–2022)

	Annual risk of death per million km traveled by bicycle daily	Annual risk of being seriously injured per million km cycled daily
2010	12.7	88.6
2019	9.0	72.5
2022	7.5	65.5

But it is not so much about the registration of cycling accidents, which is also important and is reflected in these Bicycle Accounts, but rather about how road safety and the position of the bicycle on the roads are perceived. This perception is essential to establish strategic options in relation to cycling mobility and its infrastructure, since the transfer of trips by car to bicycle can only occur with increased confidence in the safety of pedaling, closely linked to the way in which that roads are designed and managed.

Consequently, it is also important to have, as the Bicycle Accounts do, a representation of the current state of the cycling infrastructure, which should be complemented with the review of the rest of the road on which the bicycle must coexist, since the policies traffic calming measures will be essential to achieve the objectives proposed in the scenarios proposed for 2030.

Furthermore, as the Bicycle Accounts also reflect, traffic calming policies not only contribute to greater bicycle use, but also to making this use more equitable, helping, for example, to more quickly reduce the gender gap. existing in relation to cycling mobility, which, although it is conditioned by a series of aspects of the social model that also affect the use of bicycles (such as citizen safety or the culture of physical activity), the experiences analyzed in the framework of the Accounts accredit the hypothesis that the widespread use of bicycles, derived from better conditions of cyclability and safety (due to the combination of better dedicated infrastructure and the general pacification of the road), leads to an approximation between the figures of cycling trips for men and women, a fundamental requirement to achieve the most positive future scenarios for cycling mobility.

Three novelties with their lights and shadows

Among the new features incorporated in the 2024 Bicycle Accounts compared to the 2022 edition, three aspects stand out as increasingly relevant: pedal-assisted bicycles, cyclologistics, and bicycles in rural areas.

The rise of electric bicycles (e-bikes) and their future outlook

In the past decade, the bicycle market and its usage have undergone significant changes with the emergence of electric pedal-assisted bicycles, the full extent of which is still unfolding. Sales of these bicycles totaled less than 18,000 units in 2014, but by 2023, this number had risen to 241,000 across various types (mountain, urban, touring), accounting for 20% of total bicycle sales and an impressive 45% of revenue.⁵

This surge in pedal-assisted electric bicycles mirrors trends in leading European markets, where rapid electrification has dominated, comprising

⁵Figures from The bicycle sector in figures. 2023 of AMBE (Association of Bicycle Brands of Spain), published in June 2024.

over half of bicycle sales in countries with strong cycling traditions like the Netherlands and Germany. Countries such as France, Italy, and Spain are following suit, albeit with a slight delay.

The rapid growth of pedal-assisted bicycles raises numerous questions, opportunities, and challenges for cycling mobility and the policy scenarios outlined in this report. One pivotal question concerns the market share and usage proportion of electric bicycles compared to conventional bicycles expected to be achieved in Spain in the coming years.

If current sales growth rates persist, projections suggest that by 2030, electric bicycles could capture about half of the bicycle market share in Spain, particularly dominating the mountain and urban segments. Extrapolating these figures to urban commuting, pedal-assisted bicycles could potentially account for over 50% of cycling trips by that same year.

Opportunities in cycle logistics and their labor challenges

The transportation sector involving bicycles and other human-powered vehicles encompasses a variety of commercial and functional applications. Currently, the use of bicycles for these purposes is expanding across all European countries, albeit with Spain experiencing slower growth compared to its counterparts.

The advantages of cyclologistics over other delivery methods involving motorized vehicles include its versatility, relatively low cost, minimal environmental impact, and suitability for densely populated areas with saturated infrastructure. For these reasons, cyclologistics is seen as capable of replacing a significant portion of urban distribution trips. This provides ecological solutions crucial for the ongoing transition, particularly addressing the surge in digital platform-driven distribution over recent years.

In addition to traditional segments of cyclologistics with established business structures, bicycle delivery, particularly for food and packages, is increasingly dominated by digital platform companies. This trend has led to a paradox: while more bicycles populate our streets, it has also exacerbated harsh working conditions and compromised road safety, particularly affecting migrant workers.

The irregularity, instability, lack of transparency, and precariousness inherent in this context make it challenging to accurately gauge the size of the delivery worker population, especially those using bicycles, scooters, mopeds, or motorcycles. This absence of reliable data extends to the kilometers traveled in these roles and their broader impact on cycling mobility worldwide.

The bicycle in rural Spain: Beyond cycle tourism

Cycling mobility in depopulated areas of Spain comprises two main aspects: local bicycle use as a mode of transportation and the economic activity surrounding cycle tourism.

Regarding the first aspect, the geographical context plays a crucial role in determining both the challenges and opportunities for cycling mobility. Factors such as travel distances, road safety conditions, and local cycling culture vary significantly across different regions. Addressing these regional disparities requires tailored policies distinct from those applied in urban settings to normalize cycling as a viable transportation option in depopulated areas.

Concerning the second aspect, bicycle tourism presents substantial potential for development in Spain. Regions like the Balearic Islands and the Canary Islands already attract cyclists as leading destinations, particularly during the winter months. Despite Spain's record-breaking tourism figures in recent years, gaps persist in infrastructure, information availability, and service offerings necessary to fully support various forms of cycle tourism.

In comparison to countries like Germany or France, where well-established networks and services support robust cycle tourism industries, Spain has opportunities to enhance its infrastructure and attract more cyclists. This potential underscores the importance of investing in and expanding cycling tourism initiatives across Spain's depopulated regions.

Future Scenarios for a more Bicycle-Friendly country and how to achieve them.

- The projected scenarios for bicycles and cycling mobility effectively communicate a vision of the future we aim to achieve. In the initial edition of these Bicycle Accounts, three scenarios were outlined for 2030, each varying in the degree to which bicycle usage would increase. For this current edition, these same scenarios are retained, but now extended to the year 2032. This allows projections to cover a two-term span, encompassing a period of eight years.
- **Trend scenario.** It anticipates a growth in bicycle usage similar to the trend observed over the past decade, aiming to achieve a share of approximately 2.5% of daily trips by the end of the next two full terms of local and regional governments across the country. This would double the share observed in 2019, just prior to the onset of the pandemic.
- **Socioecological transition scenario.** It proposes accelerating the growth of bicycle usage to achieve a modal share of 5% by 2032, nearly quadrupling the share from 2019. This scenario aligns with the updated National Integrated Energy and Climate Plan 2021–2030 (PNIEC), whose draft was approved by the Council of Ministers in 2023. According to this plan, measures promoting modal shift are expected to redirect 35% of current passenger kilometers from conventional vehicles to non-emitting modes by 2030. The bicycle undoubtedly plays a crucial role in this transformative equation.
- **Disruptive scenario.** Consider the significantly more ambitious goal of bicycles achieving a 10% share in trip distribution within just two terms of local and regional governments. This objective closely mirrors the proposal put forth by the Bicycle Cities Network in the Senate in April 2022.

Scenarios for the evolution of cycling mobility in Spain

Scenarios	Modal share	No. Daily trips	Daily tours ⁶
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⁶To calculate the routes, an average displacement of 4.5 km per trip for conventional bicycles and 9.0 km for electric bicycles has been considered.

	2022	Base	1.67%	2.21 million	10.8 million km
	2032	Trend	2.50%	3.56 million	19.2 million km
		Transition	5.00%	7.11 million	40.0 million km
		Disruptive	10.00%	14.23 million	83.2 million km

To illustrate the potential of these scenarios, consider the data on car trips that comfortably cover distances suitable for cycling. For instance, in 2018, two-thirds of car trips in the Community of Madrid were less than 10 km. Moreover, leveraging intermodality—combining active mobility (walking or cycling) with public transport—can effectively replace car journeys.

Achieving either of the two envisioned scenarios—a socio-ecological transition or a disruptive transformation—necessitates implementing a cohesive set of interrelated policies that promote modal shifts towards cycling. These policies are outlined in the following table:

Essential policies to achieve desirable scenarios in 2032

Policies	Description of its contents
Calm motorized traffic	Implementation of a range of measures aimed at reducing the intensity and speed of motorized traffic includes regulations and

	incentives that discourage parking, as well as restrictions on circulation and access below specific general or local thresholds on designated roads.
Urban cycling infrastructures	Formalizing cycling networks with adequate conditions of quality, comfort, and safety in urban and metropolitan environments necessitates including bike racks as part of urban cycling infrastructures, considering that parking facilities are essential post-trip.
Adaptation of urban roads to bicycles	Since segregated cycling infrastructure may not be feasible or practical on a large portion of urban roads, the goal is to modify general roads to facilitate the coexistence of motorized traffic with a diverse range of cycling profiles as much as possible.
Intermodality	Establishing optimal conditions for integrating bicycles with various types of public transport involves addressing the entire travel chain. This includes facilitating access to stations, providing adequate parking facilities, and where necessary, accommodating the transportation of bicycles on public transport services.
Cycle logistics	Creating a conducive economic and social environment for the growth of cyclologistics involves promoting this distribution method over motorized logistics. This effort also includes ensuring fair working conditions and providing comfortable and safe cycling environments through public authority initiatives.
Cycling conditioning of rural and interurban roads	In areas with lower potential cycling density, it's essential to implement road concepts and designs distinct from those used in urban areas. This approach aims to calm traffic and create safe and comfortable cycling conditions that are perceived as such by users.
Supramunicipal cycling networks	Establishing itinerary networks for comfortable and safe cycling across various territorial levels is crucial, ranging from the EuroVelo network to regional, metropolitan, and local networks. The ultimate goal is to create an integrated and cohesive network of networks that ensures seamless connectivity and enhances the overall cycling experience.

However, achieving the desired scenarios for cycling modal share cannot rely solely on voluntary measures. Instead, it requires leveraging a set of governance tools that facilitate progress. These tools are summarized below in a concise manner.

Tools for desirable scenarios for 2032

Tools	Description
Planning	Planning is ordering actions and resources in time. Planning the cycling modal shift requires a planning effort at very different scales. The State Bicycle Strategy must be renewed upon completion (2025) with another

	state instrument and with replicas or similar tools at the different levels of government, in coordination with other mobility planning instruments.
Coordination	The integration of bicycles into the mobility system necessitates both vertical coordination across different levels of government and horizontal coordination among various departments within the same institution or public administration. Achieving this requires breaking down the silos that currently constrain decision-making and collaborative efforts.
Regulation	There remains a significant opportunity to reform regulations that impact the implementation of policies such as traffic calming and infrastructure development. These reforms should focus on ensuring manageability, meaning they can be effectively monitored and implemented by competent administrations.
Of participation	Achieving a cultural change as significant as normalizing bicycle use nationwide requires participatory processes and citizen interventions. These processes must overcome individual interests and amplify the voices of groups typically underrepresented in public discourse.
Of knowledge	In addition to coordinating the technical aspects of policies for transforming public spaces and roads, it's crucial to establish communication, education, and training channels across all aspects of cycling mobility.
Promotional	Promoting the bicycle involves not only highlighting its virtues but also demonstrating its less visible advantages. It's about more than just communication—it's about facilitating hands-on experience. Promoting the bicycle should not solely rely on theoretical benefits but should also showcase practical examples and success stories.
Financing	Aligning administration policies with the socio-ecological transition in mobility, involving a significant increase in bicycle usage, comes at a cost. It requires substantial resources that should be sourced not from reallocating funds from other priorities or social needs, but through a reevaluation of budget allocations currently dedicated to mobility, particularly motorized forms.

In conclusion, as evidenced from the discussion above, achieving desirable scenarios of cycling modal shift requires a strategic, persistent, and well-coordinated accumulation of efforts through a diverse range of policies executed within a framework of robust governance. The challenge is substantial, yet the potential benefits of success are equally significant.

This is the objective of the 2024 Bicycle Accounts: to contribute to the ongoing transformation towards a more cycling-friendly mobility model in Spain.