

# Green bonds annual report

# 2021



# LETTER

FROM THE CHAIRWOMAN



Transport and mobility infrastructure sectors in Spain, and in particular the railway sector, are immersed in a comprehensive transformation process that places them in a position to face enormous challenges. The 2030 Strategic Plan (PE 2030) has been designed precisely to respond, at strategic and operational level, to these major global challenges that will mark the development of Adif Alta Velocidad's activity over the next decade.

Traditional social practices must be replaced by new consumption habits, new passenger requirements and needs in goods supply. All together shapes a new transport and mobility ecosystem in which Adif Alta Velocidad (Adif AV) must not only be present, but also be a driving force for change.

As public entity, we are committed to the development of a strategy troubled by safety and the promotion of sustainable and accessible transport capable of achieving social and territorial cohesion.

Challenges are numerous: from the need to combat climate change and the contribution to energy transition, to economic sustainability, support for diversity, equality and social action, generational change, comprehensive safety, impact of disruptive technologies, etc. Adif AV must address all these challenges with actions that operate under technical, economic, environmental and social sustainability criteria. Adif AV works to transform each of these challenges into an opportunity for success for society as a whole, offering a leading railway network adapted to the new competitive environment.

In this disruptive context, Adif AV is aware of its key role in the dissemination of rail as an efficient mode of transport for the mobility of people. Therefore, we are also working to offer a **safe and resilient infrastructure network** that ensures full passenger protection. This new strategy will ensure that the impact on society is relevant and positive. As an



organization at the service of people, we are focused on offering inclusive transport by eliminating any kind of barrier to rail access, as well as on promoting the connectivity and wellbeing of people and all other stakeholders.

This new strategy will ensure that the impact on society is relevant and positive. As an organisation at the service of people, Adif Alta Velocidad focuses on offering inclusive transport by eliminating any kind of barrier to rail access, as well as promoting connectivity and the well-being of people and all other stakeholders.

Another important point to consider when adapting to the environment is the technological revolution. Adif AV focuses its efforts on configuring a digital, connected, intelligent and safe infrastructure network, improving the quality of services perceived by society, adapting to new mobility trends, and generating value. To this end, management is carried out through **innovation, intra-entrepreneurship and the incorporation of disruptive technologies** to be more efficient and competitive.

From the point of view of the articulation and deployment of this business strategy, the pillars of this company for the coming years are **safety, service, sustainability and results orientation**. These four pillars will be implemented through the levers of communication, innovation and digital transformation.

In short, at Adif AV we are committed to the United Nations Sustainable Development Goals and aligned with European taxonomy and national governmental policies; we are working towards social welfare and equality; we act to advance the development of an inclusive and fair model.

Adif AV focuses its strategy on the expectations of its stakeholders, internal challenges and global challenges related to sustainable development, a goal that commits them to a more social and efficient future.

**M<sup>a</sup> Luisa Domínguez**

Chairwoman of Adif and Adif Alta Velocidad

# INTRODUCTION

Adif Alta Velocidad is a state-owned public entity (“public business entity”) with legal personality, management autonomy and own resources, which operates under the supervision of the Ministry of

Transport, Mobility and Urban Agenda, being responsible for the construction and management of the high-speed railway network of Spain.

As a public service company, we understand that we are committed to promoting a socio-economic development model that is sustainable, seeking social well-being and equality with an inclusive, fair and healthy model, and that implies facing different challenges that affect us all, both global and local.

From a global point of view, these challenges are synthesized in the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations (UN), especially in those that are most relevant to our organization, taking into account the contribution that we can make to them according to our nature and activity.

Moreover, we must also align ourselves with national policies and strategies that set the path to follow in the coming years, such as the Spanish Recovery, Transformation and Resilience Plan or the Safe, Sustainable and Connected Mobility Strategy of the Ministry of Transport, Mobility and the Urban Agenda.

Regarding local challenges, the demands and expectations of our stakeholders are summarized in that we must contribute to a safe,

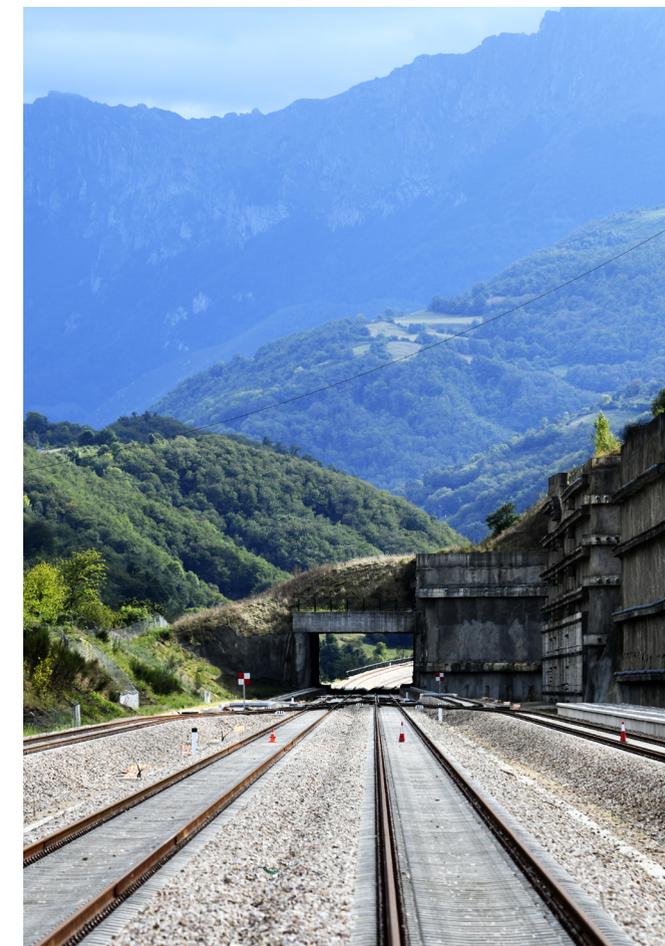
efficient and sustainable transport system.

In addition to global and local challenges, internal challenges for the company must be taken into consideration.

In this context Adif AV, in its Strategic Plan (SP) 2030 has aligned the entity's strategic lines to the major environmental, social, operational, and business challenges it must face in order to become a benchmark as an organization focused on the management of resilient, sustainable, safe and smart infrastructures that contribute to the new ecological transition model.

This Plan is based on four pillars: Safety, Service, Sustainability and Focus on Results. It also has three levers to accelerate the transformation process: Communication, Innovation and Digital Transformation. All of this implies that People are the driving force behind these pillars and levers, which are deployed in different strategic objectives in a total alignment. To this end, the SP2030 takes the SDGs as its inspiration and guide, orienting its strategic initiatives to generate shared value with society.

In the SP2030, Adif AV has the ambition to operate, manage and build a smart rail network adapted to the new technological, competitive, and sustainable ecosystem, thus contributing to the SDGs and generating shared value with society. In doing so, it maintains and reinforces its strong commitment to SUSTAINABILITY by establishing lines of action and specific



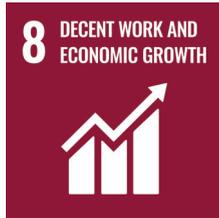
strategic objectives that seek to improve our impact on society from an economic, social, environmental and good governance point of view.

Thus, in the sustainability pillar the following strategic objectives have been defined:

1. To become a benchmark in the energy transition strategy
2. To fight against climate change (achieving zero net emissions by 2050)
3. To recover nature and biodiversity
4. To promote a culture of climate change awareness
5. To generate a positive social impact in favor of social cohesion and inclusion
6. Reach new revenue streams through energy transition opportunities and contribute to the development of sustainable finance.



In the SP2030, a monitoring system has been put in place in order to evaluate the correct implementation of the SDGs, the evolution of the construction and maintenance of High Speed Lines, as well as the projects aimed at improving the energy efficiency of the railway system and the promotion of its sustainability. This monitoring system also aims to ensure the correct allocation of the funds obtained from the issuance of green bonds and that they indeed have a positive impact on the following Sustainable Development Goals and Targets of the UN 2030 Agenda:



*"Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all"*

**Target 8.2: "Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, focusing on high value-added and labour-intensive sectors"**. Adif AV promotes the development of the railway network with high-level technological solutions and fosters safe and quality employment.



*"Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"*

**Target 9.1: "Develop reliable, sustainable, resilient and quality infrastructure, including regional and cross-border infrastructure, to support economic development and human well-being, with particular emphasis on affordable and equitable access for all"**. High-speed rail lines are built to the highest quality standards to ensure their resilience and reliability. Strict criteria of sustainability and respect for the environment are applied to their construction and maintenance, with environmental monitoring measures in place to ensure the preservation of natural, cultural and archaeological heritage.



*“Make cities and human settlements inclusive, safe, resilient and sustainable”*

**Target 11.a: “Support positive economic, social and environmental linkages between urban, peri-urban and rural areas by strengthening national and regional development planning”.** High-speed rail lines substantially improve, in a planned manner, the connection between urban, peri-urban and rural areas, allowing the generation of economic and social linkages, thereby generating opportunities for growth and well-being. Furthermore, projects aimed at improving the environmental sustainability of infrastructure, such as those that help to minimize the impact of noise on inhabited areas, can also contribute to achieving this SDG.



*“Take urgent action to combat climate change and its impacts”*

**Target 13.1: “Strengthen resilience and the capacity to adapt to climate-related risks and natural disasters in all countries”.** Since 2020, new rail infrastructure projects requiring European funding are being developed, including an analysis of risk and adaptation to the effects of climate change, thereby improving the resilience of high-speed infrastructure under construction.

**Target 13.2: “Integrate climate change measures into national policies, strategies and plans”.** The development of the high-speed network will shift significant amounts of traffic from road and air transport to rail, which is the means of transport with the lowest CO2 and other greenhouse gas emissions. This allows combating climate change through a better contribution of the transport sector to the fight against climate change. Likewise, projects aimed at improving energy efficiency are associated with a reduction in CO2 emissions, so they are also a tool in the fight against climate change.

On a next step within this strategic approach, Adif AV approved in 2019 the **PLAN TO FIGHT CLIMATE CHANGE 2018-2030** (jointly with ADIF), as a strategic measure of the SP2030 Sustainability pillar, whose main objective is to increase the company's contribution to this environmental challenge, as well as the contribution of the railway system within the entire national transport sector.

Thus, the main milestones to be achieved with the Plan are reflected in three areas:

### Mitigation

In the area of **mitigation**, the main objective is to improve energy efficiency and reduce greenhouse gas (GHG) emissions:

- Reduce energy consumption of the railway system by 2,900 GWh cumulatively in the period 2018-2030
- Reduce GHG emissions by 9,000 ktCO<sub>2</sub>eq accumulated in the 2018-2030 period, with the implementation of the projects included in the Plan plus the emissions avoided by the modal shift. This reduction would reach 12,000 ktCO<sub>2</sub>eq if the purchase of green electricity is taken into account
- Reduce the carbon footprint of Adif and Adif AV by at least 25% by 2030, compared to the 2016 value, and up to 86% if the purchase of green electricity (with Guarantee of Origin -GdO- certificates) is taken into account. Our commitment is to reach carbon neutrality by 2050 at the latest

### Adaptation

In the area of **adaptation**, with the aim of improving the resilience of rail infrastructures:

- Include the assessment of vulnerability to the adverse effects of climate change in 100% of major rail projects from 2020.

### Culture and awareness-raising

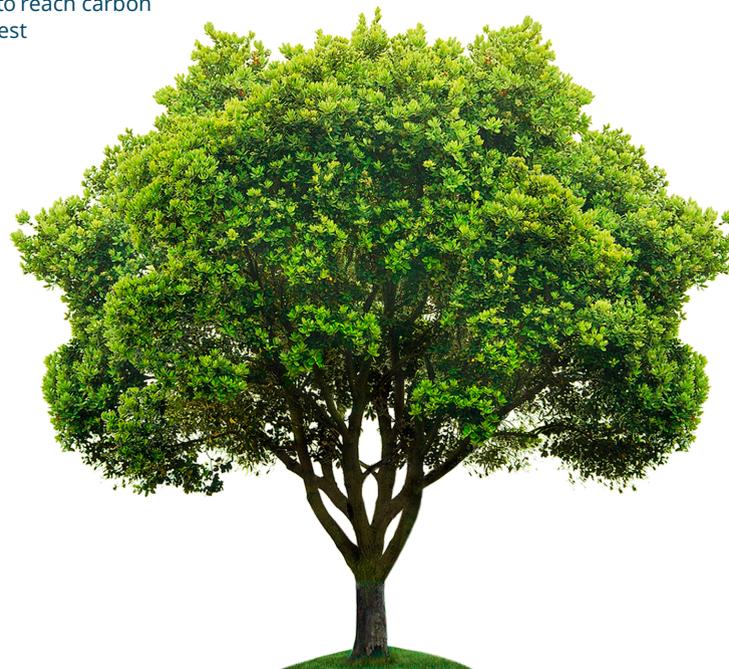
In the area of **culture and awareness-raising**, the objective is to raise awareness among internal and external stakeholders through various actions, such as:

- Include climate change-related clauses in 100% of contract specifications as from 2025.

In order to achieve these goals, the Plan is structured into five main lines of action: energy management, energy efficiency, decarbonisation and renewable energies, resilience improvement, and culture and raising awareness, which, in turn, are deployed in different programmes and specific projects with different scopes. It is a living document that will be periodically reviewed to update its content and adjust the established goals.

With this Plan, Adif AV aligns with the main existing international commitments in the fight against climate change, contributing both to the achievement of the Sustainable Development Goals of the United Nations Agenda 2030 (specifically goal no. 13 "Climate Action") and the pact reached by the signatory countries of the Paris Agreement.

It is also in line with current European and national policies aimed at achieving climate neutrality by 2050, as set out in the European Commission's Green Pact, in the National Integrated Energy and Climate Plan and in the recently approved Climate Change and Energy Transition Act.



# FRAMEWORK

Adif Alta Velocidad has recently published the second revision of its Green Funding Framework, which will apply to emissions implemented from 2022. This new framework expands the entity's sustainability ambitions and aligns with the EU taxonomy objective of mitigating climate change and strengthening its governance, especially with regard to project selection and assessment.

In this regard, eligible projects under this framework are divided into two broad categories: on the one hand, investments related to new railway lines and extensions and, on the other hand, investments related to the maintenance, upgrading and energy efficiency of the high-speed rail system. These projects should contribute to the decarbonisation of the Spanish transport sector, with the aim of shifting transport from road and air to rail, generating significant emissions savings. In order to verify the suitability of the projects, and prior to the allocation of funds, an exhaustive evaluation and selection process has been implemented. Eligible projects will include new and ongoing projects with disbursements up to two years before and three years after the issuance of the bonds.

This update of the financing framework has been rated by second opinion provider Sustainable Fitch, as an independent advisor selected through the competitive bidding process. The rating awarded by this rating agency was Excellent, highlighting ADIF Alta Velocidad's commitment to sustainability, in line with its commitment to the Sustainable Development Goals of the United Nations 2030 Agenda.

The previous version of the framework had been rated "Dark Green" by Cicero Shades of Green.

You may find more information in the following website: ([www.adifaltavelocidad.es/informacion-sostenibilidad](http://www.adifaltavelocidad.es/informacion-sostenibilidad)).

The revised framework reflects the four components included in ICMA's Green Bond Principles:

- Use of funds in Eligible Green Projects
- Selection process
- Management of proceeds
- Reporting

## USE OF PROCEEDS IN ELIGIBLE GREEN PROJECTS

Resources from the green bond issuance are allocated to Eligible Green Projects, which include new projects and continuation of ongoing projects, with disbursements up to 24 months prior to bond issuance and up to 36 months from the date of such issuance (24 months from the date of issuance in the case of the 2021 issuance, subject to the previous framework). Specifically, they are earmarked for two categories:

- 1) Investments related to new high-speed rail lines and extensions of existing high-speed lines.
- 2) Investments related to maintenance, upgrade and energy efficiency of high-speed rail lines..

## SELECTION PROCESS

43.32% of funds obtained with the **fifth green bond issue**, executed on 29 of September 2021, were invested on projects belonging to category 1.

More precisely, they have been allocated to the following projects:

### CATEGORY 1 PROJECTS

CONNECTION CHAMARTÍN-ATOCHA-TORREJÓN UIC AND CHAMARTÍN STATION NORTH HEAD END

CONNECTION MADRID-SEVILLE HIGH SPEED LINE AND CORDOBA-MALAGA HIGH SPEED LINE

MADRID-BARCELONA-FIGUERAS HIGH SPEED LINE

VALLADOLID-BURGOS-VITORIA HIGH SPEED LINE

MADRID-GALICIA HIGH SPEED LINE

MADRID-CANTABRIA HIGH SPEED LINE

## CONNECTION CHAMARTÍN-ATOCHA-TORREJÓN UIC AND CHAMARTÍN STATION NORTH HEAD END

On 16 June 2022, the Chamartín-Atocha-Torrejón de Velasco connection section was brought into service. The entry into service of this section means that it will be possible to connect the lines from the South and East of Spain with those from the North and vice versa, without passengers having to change trains.

Likewise, the incorporation of two new tracks in the accesses to the Madrid-Levante and Madrid-Andalusia high-speed corridors will increase the capacity of the infrastructure.

Ongoing works consist of:

- The construction of a double-track UIC standard width tunnel (7.3 km).
- The connection of the tunnel with the quadrupling of the Atocha-Torrejón de Velasco section by means of a provisional single-track tunnel (0.9 km). This tunnel passes under the current Atocha station and serves to provide a provisional connection between the tunnel and the new platform until the definitive one that will house the new underground station of Atocha is completed.
- New platform between Atocha and Torrejón de Velasco with capacity for two new tracks.

As for the north end of Chamartín Station, the remodeling project for the Iberian width tracks and platforms proposes to provide a total of 13 tracks for the Iberian width station, allowing the removal of tracks 14 and 15, their subsequent conversion to UIC standard width and their integration into the high-speed station. Likewise, the adaptation and remodeling of the respective platforms and the update of the interlocking that governs the station are also contemplated.

It is worth mentioning the construction of new tracks (9-bis and 10-bis) that will increase the line's capacity and make new car parks possible.

Six crossing tracks are assigned to the Sol tunnel (tracks 1 to 6) and seven to the Recoletos

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tunnel (tracks 7 to 13).

Works are also being carried out on the installation of tracks and signaling equipment to increase the speed of traffic and meet the increase in demand, as well as to rise the flexibility of the railway network and improve the response of the facilities to possible incidents.

As for the recovery of the suburban vestibule under the tracks, work is being completed to adapt the old suburban vestibule for public use, which was already available at Chamartín station but was closed in the eighties, so that it can absorb passenger movements between tracks 1-11 of Chamartín Station and the Metro vestibule, allowing accessible intermodality, with a high degree of progress in the execution to date.

The renovation project of the suburban lobby under the tracks at the north end of the station includes the refurbishment and renovation of the old suburban hallway under the tracks, as a large space on a single level, with the recovery of the pre-existing vertical communication cores between the platforms and the lower lobby, with the installation of escalators and fixed staircases. Accessibility is completed with the inclusion of lifts within the lobby.

This will allow an accessible connection between tracks 1-11, as well as a direct connection with the Metro de Madrid, boosting intermodality between the different means of transport.

With regard to the conversion of tracks 14 and 15 to UIC width at Chamartín Station, the project involves the conversion of the current Iberian width tracks 14 and 15 to standard UIC width, as well as the integration of the new tracks in the high-speed sector of the station, as a prior step to future extensions of the complex to meet the growth in traffic that will occur with the forthcoming entry into service of new sections of the Spanish high-speed network.

As for platforms, shelters and non-railway facilities associated with tracks 14 and 15, as a result of the conversion of tracks 14 and 15, platform 9 needs to be extended for high-speed operation. Likewise, the platform 9 shelter will be extended by 60 m by means of 8

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modules of 7.5 m each, of the same type as the current one.

Once the infrastructure for both tracks has been completed, work is being carried out on the assembly of the catenary and the railway installations.

A northern subway is being built to provide access to the auxiliary railway installations.

As for the covering of tracks 13 to 17, the foundations and piles located between tracks 13 and 17 that will take part of the cover of the track sidings at the southern end of Chamartín station are being built.

## CONNECTION MADRID-SEVILLE HIGH SPEED LINE AND CORDOBA-MALAGA HIGH SPEED LINE

### Almódovar del Río Bypass

This is a connecting branch of approximately 1.7 km between KP 364 of the Madrid-Seville High Speed Line and KP 5 of the Cordoba-Malaga High Speed Line, which will take advantage of the existing bypasses already installed on both lines (at Almodóvar and La Marota). This new link will save 20 minutes on the Seville-Malaga/Granada connections.

The infrastructure works have been awarded since 2019 and began in July 2020. The completion of the infrastructure and track works is scheduled for December 2023.

As for the activities corresponding to signaling and communications installations, once the optimum technical solution has been determined, the contract for the construction and execution of the works was signed on 27 June 2022, and it is currently about to be handed over for supervision and start of the installation works, scheduled for early 2023, in coordination with the evolution of the actions and works of the track project already underway.

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## MADRID - BARCELONA - FIGUERAS HIGH SPEED LINE

### La Sagrera Station

Four major infrastructure work projects are currently ongoing:

**Accesses to Sagrera Station:** construction of the underground access to the body of the station itself, both north and south, from the exit of the Sants tunnel towards Sagrera to the railway triangle where the Rodalies de Mataró line forks, allowing the relocation of the standard width platform and the existing commuter lines to their definitive position in the tunnel. These works include the construction of the civil works for the future Train Technical Treatment Area.

**Sagrera Station structure:** installation of concrete screens, foundations, slabs, galleries and emergency exits of the station, as well as platforms, both for High Speed and Rodalies. Works also include the car parks and the structure of the access to the vestibule of the platform. Architecture and installations will be the object of another contract, as well as the high-speed superstructure.

**Sant Andreu sector:** installation of the covering slab from the railway triangle of the Mataró line to the Trinidad junction, burying the high-speed and Rodalies tracks, including the new Sant Andreu Comtal station; construction of workshops for the maintenance of high-speed trains and segregated road access channels from the Trinidad junction to the station itself. This contract has been terminated and the outstanding actions are being carried out under individual contracts, including the new Sant Andreu Comtal station and its tracks and electrification.

**Rambla Prim collector:** construction by means of deep concrete screens of the drainage works connecting the drainage coming from the Sagrera neighbourhood to the Sant Martí neighbourhood, crossing the railway line transversally and increasing the drainage capacity, which is currently insufficient during heavy rainfall. Works were completed and accepted in December 2021.

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As for the accesses to Sagrera Station, works were reactivated on 12/04/2018 and will allow the relocation of the UIC platform and the existing suburban railway lines to their definitive position in the tunnel. Works were restarted by carrying out a preliminary clearing work in the different areas of the site. The status of the works is as follows:

- Prim collector: completed
- Mataró Corridor: it has been finished and put in service since December 2020. The construction of the tunnel in the last section of Bac de Ronda in connection with the Clot tunnel is still incomplete
- Granollers Corridor: work continues in the train treatment area
- Bus station area (north): the walls corresponding to the future segregated road on the mountain side and bus station are being built.

With regards to the structure of the Sagrera Station, works will allow the completion of the lower slab, the relocation of the existing suburban railway lines on the slab and the construction of the station vestibule slab. The current status of the works is as follows:

- Base slab: work completed
- Railway replacements on suburban railway lines:
  - Installations on the base slab: in progress.
  - Track and catenary assembly work: completed.
- AP-1 slab: formwork works are still ongoing (reinforcement and formwork of the beams at this level in the north-south car parks).
- AP-2 slab: work completed on the central hall and north-south car parks. The electrification of the relocation of the UIC width tracks inside Sagrera is ongoing. Work put out to tender in January 2022.

On 09/05/2022 the new version of the project was technically approved once the required corrections to the project had been made. It is currently out to tender.

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## VALLADOLID-BURGOS-VITORIA HIGH SPEED LINE

The section between Valladolid and Venta de Baños is in service, with ERTMS Level 2 between Valladolid and León having been brought into service in 2019.

On the other hand, the section between Venta de Baños and Burgos is also operating, with ERTMS Level 2 being brought into service in 2022. The entry into service of the Venta de Baños-Burgos section has meant the high-speed passenger connection of Burgos.

Works between Burgos and Vitoria have not begun.

## MADRID-GALICIA HIGH SPEED LINE

### Olmedo-Lubián-Orense-Santiago section

The entire section from Olmedo to Ourense has been in service in ERTMS since December 2021.

It has been brought into service by sections as they were completed. The last section to be put into service was the section between Pedralba de la Pradería and Ourense.

The line has been designed for passenger traffic.

The new Ourense bypass is currently under construction, specifically the section between Taboadela and Xeixalbo.

Actions on the different sections are detailed below:

#### **Olmedo-Zamora:**

This 99 km section was commissioned on 17 December 2015 in ASFA. The most representative elements of this section include 20 viaducts totalling a length of 4.66 km. During 2018, the remodelling works at Zamora station were completed. On 27 October 2020, the ERTMS N2 system was put into service on this section, in addition to track 1 (Medina del Campo Junction).

#### **Zamora-Pedralba de la Pradería:**

110 km long, the section consists of five subsections, all of them completed and received,

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with the most characteristic singular works being: 7 tunnels (4.5 km) and 14 viaducts (4 km). During 2020, all the actions and tests corresponding to communications (both signalling and GSM-R fixed and mobile telecommunications) were completed, obtaining authorisation for commercial commissioning from the AESF on 27 October 2020, leaving the section in service and equipped with the ERTMS N2 and ASFA train protection systems. In 2020, work was carried out at Puebla de Sanabria station. The new Sanabria A.V. station is completed and in service.

## **Pedralba de la Pradería-Ourense:**

It consists of 22 subsections. Tunnels predominate in the route, reaching a total length of 125 km, compared to 9.4 km of viaducts. This section was put into service on 21 December 2021, with an improvement in journey time from 4:22 hours to 2:15 hours.

In 2021, the track assembly works between Pedralba de la Pradería and Ourense were completed. Also the works necessary for the commissioning of the overhead contact line works and associated systems, autotransformer and remote control centres, and tunnel protection and safety installations, as well as the communications works with the implementation of the ERTMS N2 system.

At the end of 2022 the works for the A Mezquita Maintenance Base will be put out to tender.

## **Taboadela-Ourense:**

On 17 December 2021, authorisation was obtained from the AESF to bring the section into commercial service, leaving the section in service and equipped with ERTMS N2 train protection systems (for UIC gauge) and ASFA (for UIC and Iberian gauge).

On the other hand, at the level of the communications subsystem, a work modification is in process with the aim of proceeding with the drafting of the construction projects that include the treatment of signalling for the following actions:

1. Signalling actions accompanying the construction project for the new Ourense intermodal station and pedestrian walkway.
2. Signalling actions accompanying the platform, track and electrification projects

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for the Taboadela-Seixalbo high-speed railway bypass.

3. Abolition of the Pedralba gauge changer.
4. Action for the construction of the left track (Track 2) between Bif. Pedralba and Vilavella.

In 2021, the works corresponding to the Taboadela-Túnel de Rante and Túnel de Rante-Conexión Seixalbo sections, high-speed platform works for urban integration and upgrading of the railway network in Ourense, have been put out to tender.

The works include the necessary actions for the correct execution of the railway platform for double track between Taboadela and Seixalbo of the Madrid - Galicia High Speed Line up to the level of sub-ballast for earth elements and boards in the case of structures.

These works include the 3,410-metre Rante Tunnel and the 356-metre Viaduct over the OU-525 and the Barbaña River.

Work on these two sections began in early 2022.

In the Rante Tunnel - Seixalbo Connection section, the demolition of the buildings affected by the works, the clearing and removal of topsoil, the installation of provisional acoustic screens and the fitting out of installation areas, the replacement of several affected services and the start of the structures corresponding to Underpass 7.0 and Underpass 7.8, which replaces the Camino de Santiago, have been carried out.

## MADRID-CANTABRIA HIGH SPEED LINE

This high-performance connection between Palencia and Alar del Rey (Nogales) will extend high-speed passenger services to the north of Palencia, linking with Santander.

In 2018, the EIS (Environmental Impact Statement) was issued and the Palencia-Nogales section was approved. Given the need for detailed studies to be able to issue the resolution, the MITECO did not include the Nogales-Aguilar de Campoo section in the scope of the EIS. We are currently executing the following sections:

- Palencia Norte-Amusco (20.79 km): work awarded for 77.28 M€ (VAT included) and a 36-month deadline. Works started on 20/10/2021 and they are financed with MRR funds.

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- Amusco-Osorno (21,95 km): obra adjudicada por 79,26 M€ (IVA incluido) y plazo de 40 meses. Obras iniciadas el 03/07/2021, con financiación de fondos MRR.

Following the capacity and the study of functionality performed to determine the solution best suited to the service demand foreseen for the Madrid - Santander corridor, the following functional scheme was considered as the best solution:

- Single-track platform in the first 4.00 km (from KP 0+000 in Palencia).
- Double-track platform for the following 37 km (from PK 4+000 to PK 41+000).
- Single-track platform from KP 41+000 to the end of the section (KP 78+630).

## INDICATORS

The indicators analyzed for each of the selected projects are summarized below:

### SAVINGS

	EXTERNAL COST	TIME		MODAL TRANSFER		TONS OF CO <sub>2</sub>	
	(Thousand Euros)	(Thousand hours)		(Thousand Passengers/ KM Transferred)			
	30 years	30 years	Annual average	30 years	Annual average	30 years	Annual average
Valladolid - Burgos - Vitoria HSL	5,778,232	114,677	3,823	60,397,188	2,013,240	2,625,652	87,522
Madrid-Galicia Tramo Olmedo-Zamora-Ourense HSL	4,228,626	144,273	4,809	38,418,279	1,280,609	1,851,003	61,700
Atocha-Chamartín-Torrejón de Velasco y Cabecera Norte Chamartín connection	15,137,189	266,739	8,891	91,156,778	3,038,559	8,594,328	286,478
Madrid-Sevilla y Córdoba-Málaga (Almodóvar del Río) connection	372,252	7,502	250	11,991,020	399,701	163,916	5,464
Madrid-Barcelona-Figueras HSL	19,264,365	346,659	11,555	132,240,235	4,408,008	9,464,741	315,491
Madrid-Cantabria HSL	699,856	17,064,328	568,811	9,890,256	329,675	355,060	11,835
<b>TOTAL</b>	<b>45,480,519</b>	<b>17,944,179</b>	<b>598,139</b>	<b>344,093,754</b>	<b>11,469,792</b>	<b>23,054,699</b>	<b>768,490</b>

## SELECTION PROCESS

### CATEGORY 1 PROJECTS

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3

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### Indicators

## FUNDS MANAGEMENT

Until the full allocation of the net amount of the issue made on 29 September 2021 to Eligible Green Projects, Adif AV is temporarily keeping the unallocated funds in current accounts.

The audit firm PKF Attest, appointed by Adif AV, has verified the internal monitoring method and the allocation of funds to Eligible Green Projects. The auditor's report is attached to this document.

## REPORTS

Until full implementation of the issued Green Bonds, Adif AV will publish the following information annually on its website (<http://www.adifaltavelocidad.es>):



**Annual information on funds allocated during the period to Eligible Green Projects.**

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**Expected impact indicators**

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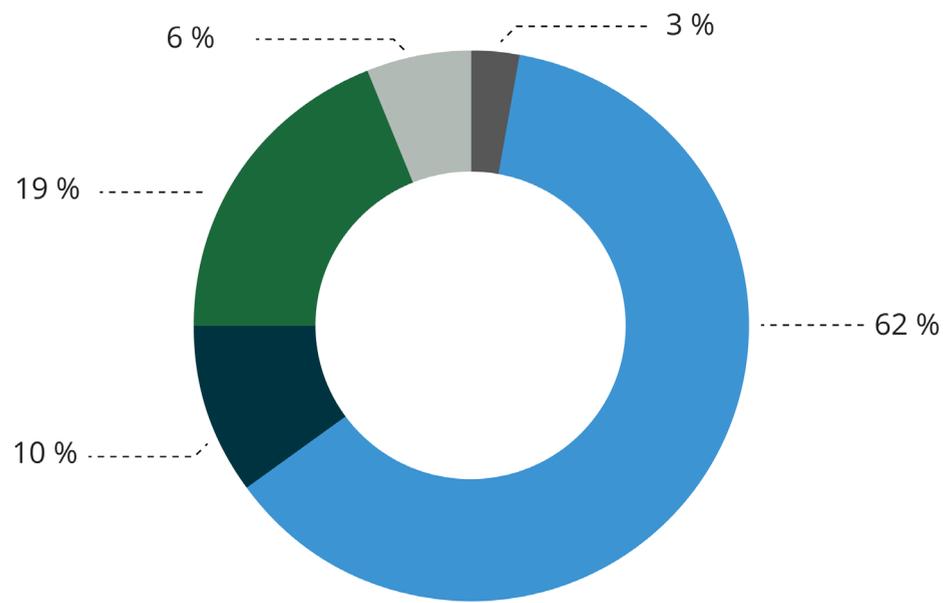
**Annual report of auditors or a third party verifying the internal traceability method and placement of funds in Eligible Green Projects.**

# 2021 ISSUANCE

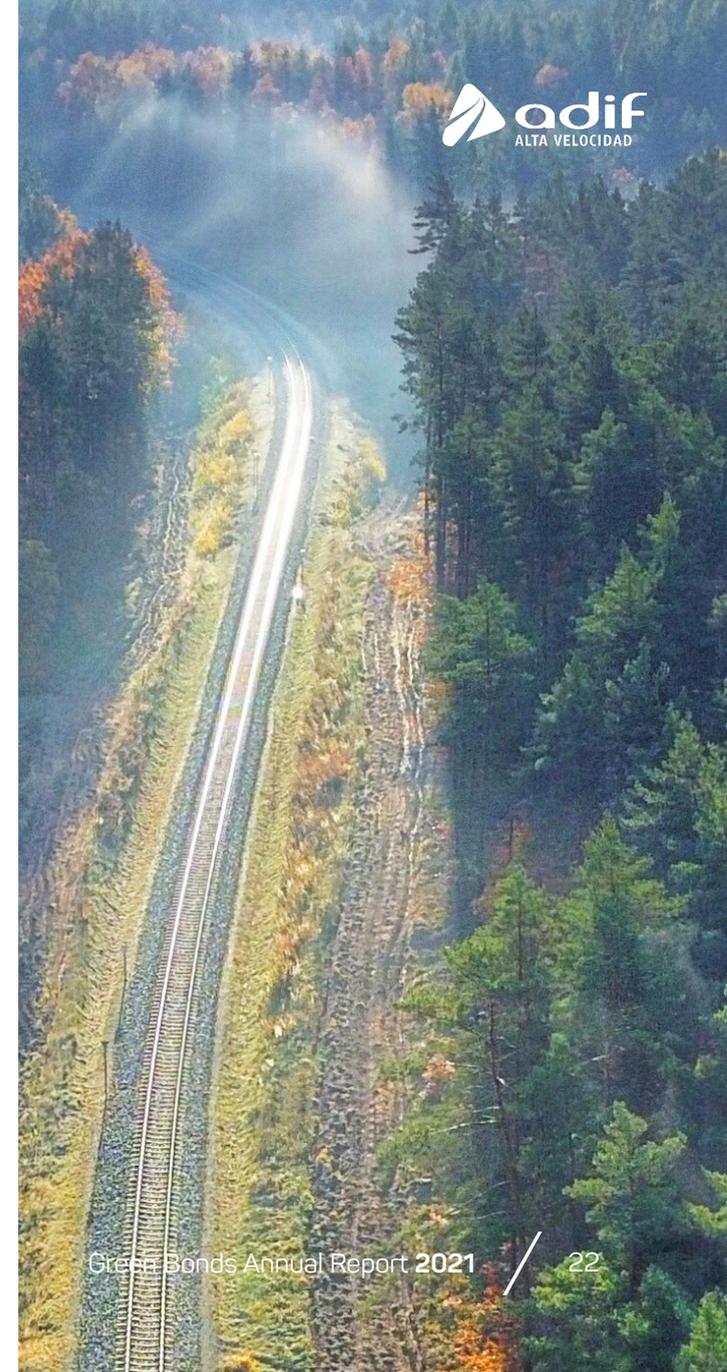
<b>Issuer</b>	ADIF AV
<b>Volume</b>	600,000,000 EUR
<b>Ratings (Moody's/Fitch)</b>	Baa2/A-
<b>Pricing Date</b>	29 September 2021
<b>Settlement Date</b>	8 October 2021
<b>Maturity</b>	31 October 2031
<b>Ranking</b>	Senior Unsecured
<b>Format</b>	Fixed rate
<b>Coupon</b>	0.55% annual, ACT/ACT
<b>Benchmark</b>	SPGB 0.50% 10/31
<b>Reoffer Spread</b>	+17 p.b.
<b>Reoffer Yield</b>	0.589%
<b>Reoffer Price</b>	99.62%
<b>Net amount</b>	596,700,000 EUR
<b>Documentation</b>	AIAF / Spanish Law
<b>Use of proceeds</b>	Finance and/or refinance Eligible Green Projects

## FIFTH GREEN BONDS ISSUANCE

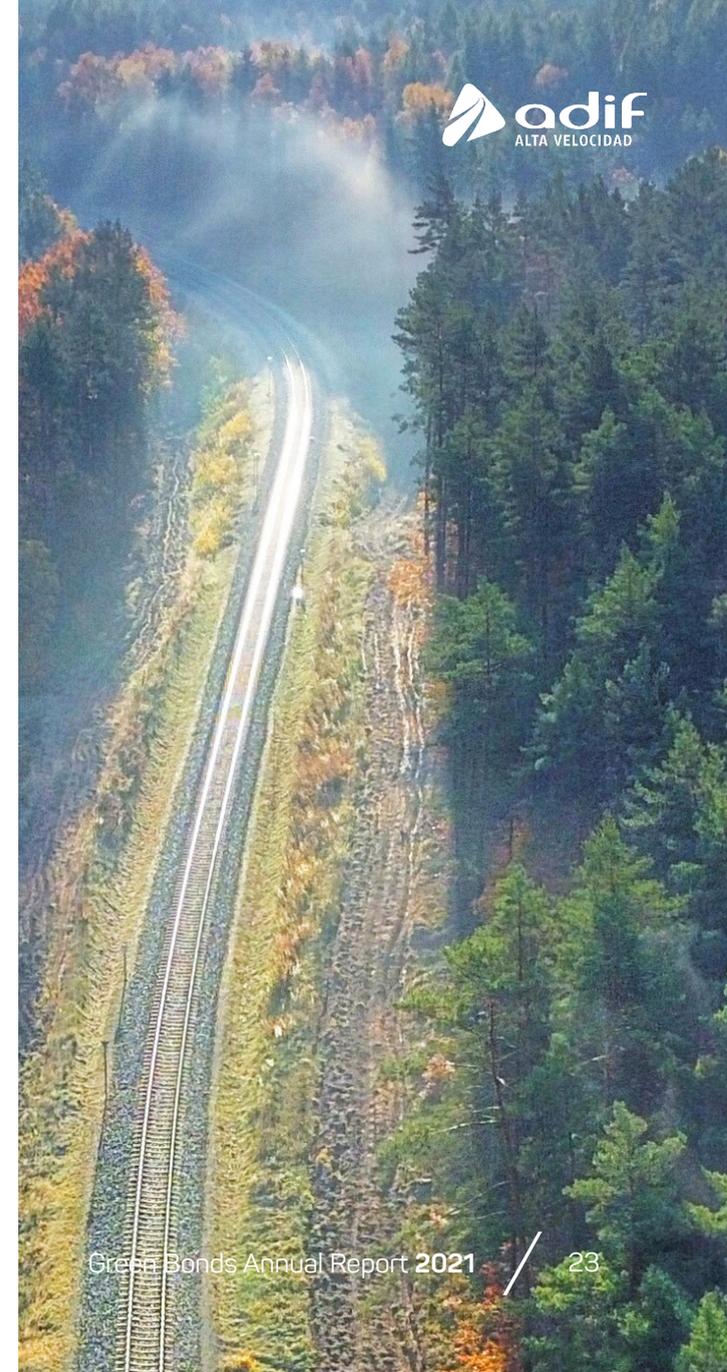
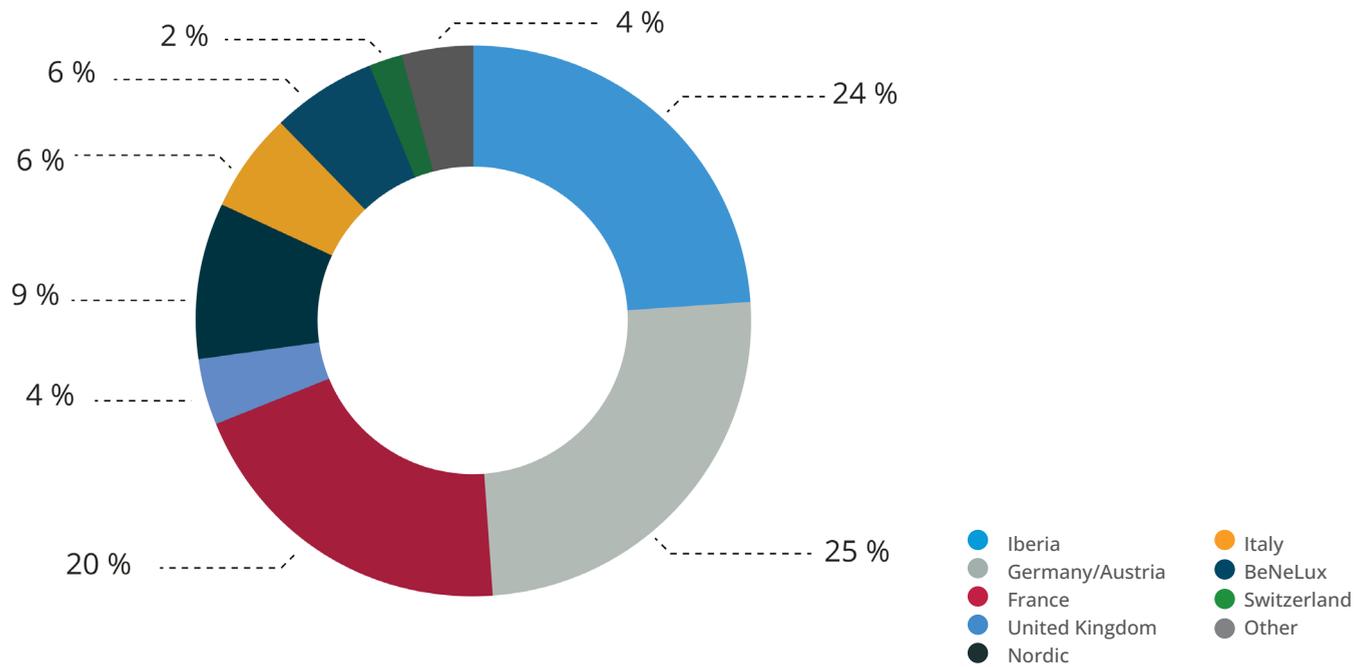
# INVESTOR CATEGORY



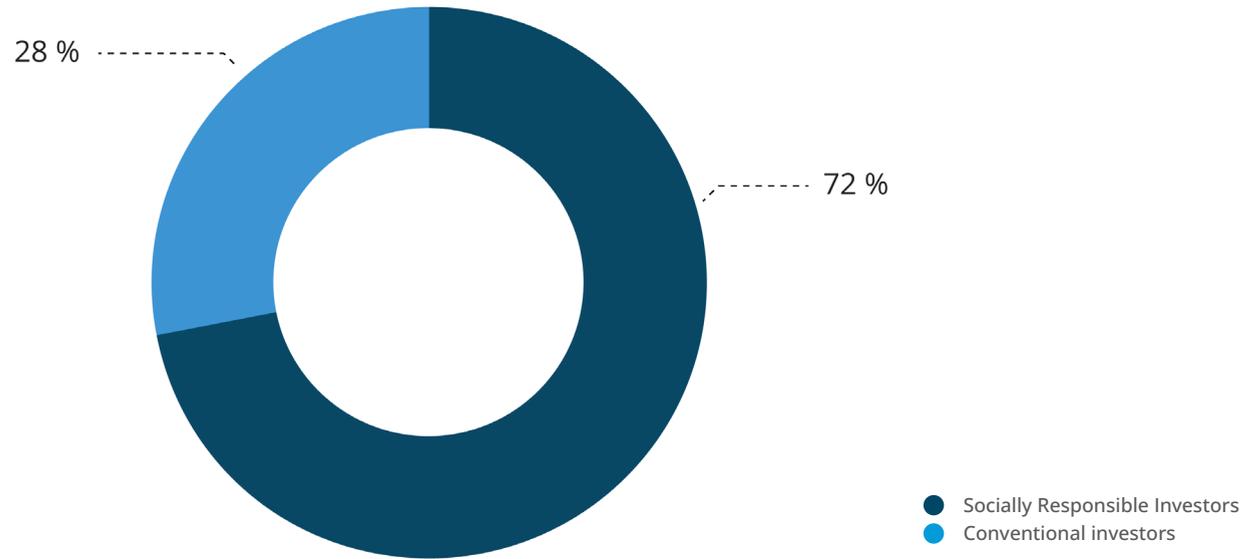
- Investment Funds
- Insurance companies and pension funds
- Banks
- Central banks and official bodies
- Other



# GEOGRAPHIC DISTRIBUTION



# SOCIALLY RESPONSIBLE INVESTORS VS CONVENTIONAL INVESTORS



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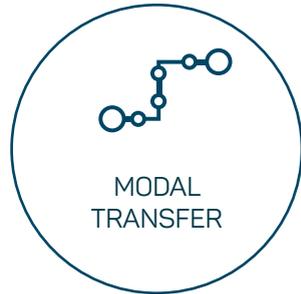
## 2021 EMISSION REPORT

We present below the report corresponding to the issue performed in 2021.



# INDICATORS OF FORESEEN IMPACT

## BROKEN DOWN BY LINES



### Category 1 projects

Investments in new high-speed lines and extensions of existing high-speed lines

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7. CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)
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# 1. INTRODUCTION

This document presents the socio-economic savings indicators established in the high-speed projects which are involved in the issuance of green bonds performed by Adif Alta Velocidad.

These indicators, which are defined in a chapter below, are the following ones:

- A.** Saving of External Costs, expressed in Thousand Euros.
- B.** Time Saving, expressed in thousand of hours.
- C.** Modal Transfer, expressed in thousand of traveler's km transferred from the different modes of transport to the high-speed railway mode.
- D.** CO<sub>2</sub> Tons Savings.

The high-speed lines analyzed as green projects are the following ones:

- Valladolid-Burgos-Vitoria High Speed Line.
- Madrid – Galicia: Tramo Olmedo-Zamora-Ourense High Speed Line. This Project includes the Ourense variant.
- Necessary actions to increase the capacity of the Puerta de Atocha and Chamartín Clara Campoamor AV high-speed stations.
- This project includes the Chamartín-Atocha-Torrejón de Velasco connection and the Chamartín North head-end.
- Connection of the Madrid-Seville and Córdoba-Málaga High Speed Lines in the area of Almodóvar del Río (Córdoba).
- Alta Velocidad Madrid – Barcelona High Speed Line. Including La Sagrera.
- Madrid-Cantabria High Speed Line: Tramo Palencia – Alar del Rey.

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## 2. PREVIOUS CONSIDERATIONS

The estimation of the indicators of socio-economic savings of each high-speed railway project **is based on studies of profitability or cost-benefit analysis** performed by Adif Alta velocidad in each of the lines analyzed, which follow the methodology and criteria established by the European Commission of Regional Policy in the document "Guide to Cost-benefit Analysis of Investments Projects. Economic appraisal tool for Cohesion Policy 2014-2020", published in 2014.

These analysis cost-benefit are based, in turn, on previous studies which provide the needed data for the estimations of socio-economic profitability, which without being exhaustive are:

- Demand (of travelers and in the case of High Speed Lines of mixed traffic, also of freight) both of the situation without project and of the situation with project, both needed for the differential calculation of the savings.
- Modal split within the transport system.
- Transfer of passengers/freight to the railway in the situation of project (in this case the new High Speed Line), for each one of the existing means in the field of the project.
- Flows of traffic generated/induced: additional traffic caused by the improvement of transport after the

implementation of the analyzed project, in this case, the high-speed railway line.

- Travel times in each means of transport based on the relationship Origin-Destination, as well as the time saving caused by the modal change.

### Demand variables

The demand variables needed for the estimation of the indicators subject of this report are the ones below:

 <b>Travelers km transferred (thousands)</b>	From private vehicle From bus From conventional train From airplane
 <b>Travelers km HSL (thousands)</b>	Captured Induced
 <b>Hours saved (thousands)</b> Time savings (thousands of	Obligated Not obligated
 <b>Tons km (thousands)</b>	Transferred from truck (ton*km in truck) Captured (ton km railways)

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The cost-benefit analysis uses a 30 years period since the implementation of the High Speed Line, a period that meets the one mentioned in the document “*Guide to Cost-benefit Analysis of Investments Projects. Economic appraisal tool for Cohesion Policy 2014-2020*” for railway projects .

### EUROPEAN COMMISSION'S REFERENCE PERIODS BY SECTOR

Sector	Reference period (years)
Railways	30
Roads	25-30
Ports and airports	25
Urban transport	25-30
Water supply /sanitation	30
Waste management	25-30
Energy	15-25
Broadband	15-20
Research and Innovation	15-25
Business infrastructure	10-15
Other sectors	10-15

Source: ANNEX I to Commission Delegated Regulation (EU) No 480/2014

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## 3. DEFINITION OF INDICATORS



### SAVING OF EXTERNAL COSTS

The indicator “Saving of external costs” shows the socioeconomic benefits monetized which are calculated in each study of profitability, arising from the improvement of the transport conditions thanks to the project and the savings that the users experience.

In this indicator of external costs saving, the following concepts are grouped in a single value:

#### A. TIME SAVINGS

Time savings are calculated for the travelers attracted (flow Origin/Destination (O/D) of travelers) by the new railway services, as a difference between the time in situation without project (or of reference) for a displacement in the means of transport used in such scenario, and the time in railway used in the scenario with project.

As a result, the savings of time are differentiated depending on the O/D and on the means of departure of each traveler attracted by the railway.

The savings of time are obtained, therefore, directly from the results of modelling of the situation of reference and from the one of the projects.

The monetary valuation of the time is performed in each study of profitability from the values of €/hour of the European project “Developing Harmonized European Approaches for Transport Costing and Project Assessment (HEATCO)”, differentiated according to the reason for travel (Obliged/work and not obliged/remaining reasons).

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## DEFINITION OF INDICATORS



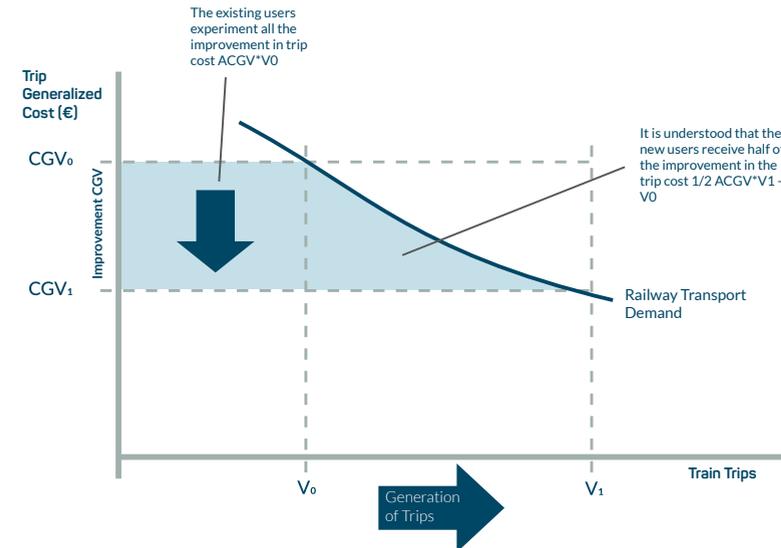
## B. NET SURPLUS OF THE CONSUMER OF NEW TRAVELERS

### GENERATED/INDUCED TRAFFIC

As previously described, generated or induced traffic is understood as the new users who perform their travel thanks to the improvement made by the implementation of the project of new railway infrastructure, and which in the situation of reference, where the transport does not improve, do not perform the travel.

In order to estimate the monetary valuation of the consumer surplus of these new travelers in each Origin-Destination relation, the methodology established in the Guide of Analysis of Cost Benefit of Projects of Investment, published by the European Commission of Regional Policy in 2014 - known as the rule of the half, is used.

## CALCULATION OF THE NET SURPLUS OF THE CONSUMER OF NEW TRAVELERS "RULE OF THE HALF"



## DEFINITION OF INDICATORS



### C. SAVINGS OF RUNNING OR OPERATION COSTS OF OTHER MEANS

#### (DIFFERENT TO THE RAILWAY ONES)

The collection of travelers coming from other means by the new railway services causes a global decrease of running or operation costs in these means.

The monetization of this saving is obtained through the product of the number of travelers transferred from the different means of transport to the railway, by the unit operation cost by travelers in its mode of origin.



### D. SAVING OF ACCIDENTS

The variation of accident cost comes from the different probability of suffering accidents between the railway in the project and the means of origin of the travelers captured or transferred to the railway.

For the monetization of this saving, the product of the number of travelers transferred from the different means of transport to the railway, by the unit cost of accidents by traveler in their means of origin, is calculated.

## DEFINITION OF INDICATORS



### E. SAVING OF ENVIRONMENTAL COSTS

- It comprises the ensemble of the environmental savings caused by the project, and includes:
- **Saving in net costs by impact in the climate change.** This corresponds to the costs in order to prevent the negative effects of the climate change caused by emissions of Greenhouse Gases (GHG). For the sector of transports the pertinent emissions are carbon dioxide, nitrogen dioxide and methane.
- **Saving in net costs by impact on the atmospheric pollution.** Refers to the costs by the adverse effects of atmospheric pollution (mainly particles, nitrogen oxides, sulphur dioxide, volatile organic compounds and ozone): effects on health, buildings and materials, and harvests.
- **Saving in net costs by impact on the noise or acoustic pollution.** For this type of projects, the incidence of the global impact can be very low or almost negligible. Its main incidence is in the sections of transit along cities affected by the project, and its effect is usually reduced by corrective measures, such as acoustic screens.

- **Saving in net costs by indirect environmental impacts.** Related to indirect effects of the transport activity, such as the production of energy (fuels and electricity).
- **Saving in net costs by impact on nature and landscape.** It refers to the costs estimated necessary to improve the existing infrastructures according to the needs of the environment. They are repair and balancing costs. These costs are no longer considered during the evaluation, because they are covered by the infrastructure investments, a significant part of which is assigned to compensate nature and landscape impacts of the works.
- **Saving in net costs by congestion.** Related to the cost caused by the time spent regarding a non-congestion situation, not taking into account the loss of efficiency part of the system.

For the estimation of these environmental savings and their monetization, unit costs are used from the “Handbook on the external cost of transport” performed by CE Delft, INFRAS, TRT and Ricardo, with values in 2016’s euro for Spain, and published in 2019 by the European Commission (hereinafter Handbook on External Costs).

In this Handbook on External Costs, appear the average unit costs of the EU for each one of the concepts involved in the environmental costs, as well as the cost of accidents, expressed in euros per 1,000 travelers-km and in euros by 1,000 tons km in the case of freight.

The following tables show the value of the study:

DEFINITION OF INDICATORS



SAVING OF EXTERNAL COSTS



TIME SAVING



MODAL TRANSFER



SAVINGS CO<sub>2</sub>

**AVERAGE FREIGHT COST (€/1000 TON - KM)**

	LIGHT TRUCK	HEAVY TRUCK (1)	ELECTRIC RAIL	DIESEL RAIL
Accidents	251.82	6.86	0.48	0.48
Air pollution	52.96	5.00	0.04	13.78
Climate change	74.02	4.73	0.00	4.76
Noise	55.68	10.49	2.71	3.04
Energy production	17.72	1.46	1.92	1.79
Enviroment damages	--	--	--	--
Congestion	490.25	4.81	0.00	0.00
<b>TOTAL</b>	<b>942.44</b>	<b>33.35</b>	<b>5.15</b>	<b>23.85</b>

(1) Values for use on interurban studies

**AVERAGE TRAVELER COST (€/1000 traveler - km)**

	PASSENGER CARS	BUSES AND COACHES	MOTORCYCLES	HIGH SPEED RAIL	ELECTRIC RAIL	DIESEL RAIL	AVIATION
Accidents	41.89	8.41	92.13	0.47	3.71	3.71	0.37
Air pollution	6.54	3.43	8.23	0.02	0.09	5.59	1.26
Climate change	11.95	4.02	9.29	0.00	0.00	2.92	22.64
Noise	9.94	3.19	111.55	0.60	2.63	2.64	0.62
Energy production	3.05	1.20	3.55	2.68	7.51	0.70	8.65
Enviroment damages	--	--	--	--	--	--	--
Congestion	51.29	6.33	0.00	0.00	0.00	0.00	0.00
<b>TOTAL</b>	<b>124.65</b>	<b>26.57</b>	<b>224.74</b>	<b>3.77</b>	<b>13.94</b>	<b>15.57</b>	<b>33.53</b>

Source: Handbook on the external cost of transport. CE Delft, INFRAS, TRT y Ricardo 2019.



**TOTAL EXTERNAL COSTS IN SPAIN BY TRAVELERS AND FREIGHT TRANSPORTATION MEANS**

Fuente: Handbook on the external cost of transport. CE Delft, INFRAS, TRT y Ricardo 2019.

## DEFINITION OF INDICATORS



SAVING OF EXTERNAL COSTS



TIME SAVING



MODAL TRANSFER



SAVINGS CO<sub>2</sub>



## TIME SAVING

This indicator is the saving, expressed in thousands of hours, experienced by the travelers attracted to high-speed railway. The estimation is made as difference between the time of the travel in situation of project (time of travel of each user between an origin and a destination in the railway mean with the new HSL), and the time in situation of reference or without project (time of travel of each user between an origin and a destination in the means of transport used originally).

DEFINITION OF INDICATORS



## MODAL TRANSFER

This indicator is the result of the travelers captured and generated/induced by the high-speed railway as difference between the demand between the situation without project (or similar) and the situation with the project, in all transport means.

In this indicator of modal transfer appear the travelers-km (in thousand) who change of means of transport, changing to the railway as a result of the improvement of the transport that the users experience because of the new high-speed railway line.

In the situation of project, the travelers in high-speed railway include the travelers generated/induced, who have already been previously defined.

# Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

## DEFINITION OF INDICATORS



UNIT	PASSENGER TRANSPORT						FREIGHT TRANSPORT					
	ROAD			RAIL	AVIATION	ROAD		RAIL	WATERBORNE			
	Passenger cars g/vkm	Buses & coaches g/vkm	Motorcycles g/vkm	Total road passenger transport g/vkm	Passenger transport g/train-km	Passenger transport (incl. LTO) g/vkm	LDV g/vkm	HDV g/vkm	Total road freight transport g/vkm	Freight transport g/train-km	Inland waterways g/vkm	
BASE	2008	2008	2008	2008	2008	2008	2008	2008	2008	2008	2008	
SOURCE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	TREMOVE	
Austria	188	586	84	198	942	11,980	268	634	394	802	25,400	
Belgium	195	615	79	198	401	11,778	240	751	415	4,089	20,660	
Bulgaria	174	566	51	202	1,338	16,804	221	617	357	2,200	21,312	
Czech Republic	188	556	77	186	1,334	11,787	221	721	393	1,666	22,226	
Denmark	198	626	80	211	4,932	13,128	213	707	383	5,809	n,a	
Estonia	226	623	65	226	4,498	8,896	231	627	367	36,355	n,a	
Finland	213	648	81	220	217	12,869	232	712	397	4,762	21,667	
France	196	636	84	198	1,043	14,200	254	663	327	1,137	19,882	
Germany	212	672	94	215	1,928	14,844	276	680	415	3,036	21,667	
Greece	185	581	79	172	6,467	19,830	219	633	361	6,934	n,a	
Hungary	193	552	74	188	1,530	13,342	225	599	353	2,936	22,664	
Ireland	186	630	76	198	6,435	19,045	200	633	349	13,336	n,a	
Italy	188	652	86	192	879	17,610	271	707	421	494	19,882	
Latvia	223	669	84	220	4,655	11,251	230	616	362	41,610	n,a	
Lithuania	203	598	71	194	9,069	10,210	222	656	371	35,202	21,667	
Luxembourg	196	618	76	204	50	6,398	209	670	367	5,371	20,660	
Netherlands	210	747	74	214	188	14,193	256	741	422	2,843	21,317	
Norway	207	608	69	210	757	13,155	214	679	373	2,949	n,a	
Poland	181	576	69	180	1,366	13,071	215	665	369	1,815	14,939	
Portugal	192	615	75	190	2,720	16,553	221	760	406	5,436	n,a	
Romania	186	561	56	175	2,293	12,715	224	610	357	5,932	22,825	
Slovakia	189	544	84	197	1,797	13,703	218	546	331	2,290	22,694	
Slovenia	192	596	75	172	1,269	6,838	223	661	373	1,437	n,a	
Spain	191	607	57	192	1,018	20,654	211	699	378	3,149	n,a	
Sweden	230	585	81	234	112	15,210	225	684	382	900	n,a	
Switzerland	208	630	64	205	0	12,151	240	661	403	583	21,667	
United Kingdom	231	820	97	237	1,123	17,795	234	815	406	7,434	21,317	
<b>TOTAL</b>	<b>204</b>	<b>647</b>	<b>79</b>	<b>206</b>	<b>1,314</b>	<b>15,887</b>	<b>242</b>	<b>696</b>	<b>381</b>	<b>3,420</b>	<b>21,431</b>	



## CO<sub>2</sub> (Exhaust) emission factors

Data source: TREMOVE (2010)

### SAVING OF TONS OF CO<sub>2</sub>

For the calculation of this indicator the factors of emission of CO<sub>2</sub> obtained in the “Study of External Costs of the Transport in Europe” (2011, CE Delft, INFRAS and Fraunhofer) have been used. These factors, measured in grams of CO<sub>2</sub> by vehicle km, have been calculated for each country, differencing by transport means, both for freight and for travelers.

The following table shows the values of these CO<sub>2</sub> emission factors, where the values corresponding to Spain are highlighted in yellow.

DEFINITION OF INDICATORS



VALUES FOR SPAIN OF THE STUDY OF EXTERNAL COSTS

	CONVENTIONAL RAYLWAY	BUS	CAR	AIRPLANE	A.RAILWAY
g CO <sub>2</sub> / vehicle - km	1,018	607	191	20,654	1,018
Average occupation	180	39	1.8	150	260
g CO <sub>2</sub> / traveler - km	5.7	15.6	106.1	137.7	3.9
<b>kg CO<sub>2</sub> / traveler - km</b>	<b>0.0057</b>	<b>0.0156</b>	<b>0.1061</b>	<b>0.1377</b>	<b>0.0039</b>

	FREIGHT RAILWAY	FREIGHT TRUCK
g CO <sub>2</sub> / vehicle - km	3,149	699
Average load	400	11.8
g CO <sub>2</sub> / ton - km	7.9	59.2
<b>kg CO<sub>2</sub> / ton - km</b>	<b>0.0079</b>	<b>0.0592</b>

From the emission factors corresponding to Spain in the previous table, measured in grams of CO<sub>2</sub> by vehicle km, and the ratio by occupation (travelers by vehicle) used in each profitability study, the values needed to perform the estimation of the saving of tons of CO<sub>2</sub> for each project evaluated are obtained and shown in this table.

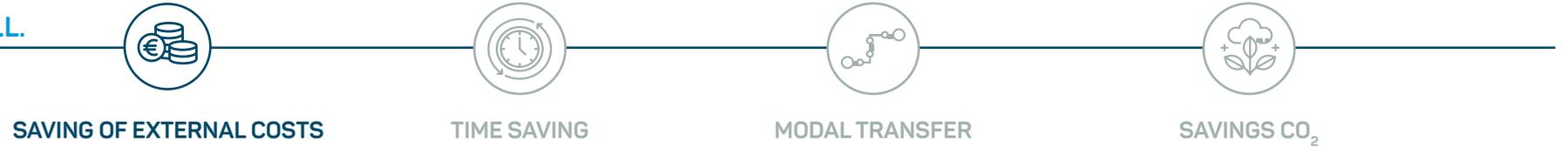
*The total saving of emissions of CO<sub>2</sub> (in tons) is calculated as application of the ratios from the previous table to the travelers.km and tons.km, captured and induced by each high-speed project.*

## VALLADOLID- BURGOS- VITORIA H.S.L.



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8. MADRID-BARCELONA H.S.L.
9. CANTABRIA (PALENCIA – ALAR DEL REY) H.S.L.

VALLADOLID- BURGOS- VITORIA H.S.L.

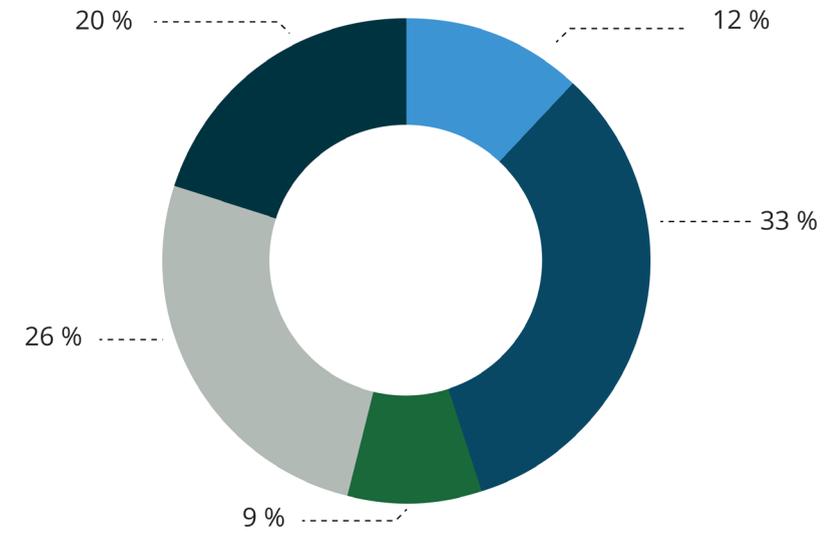


## SAVING OF EXTERNAL COSTS

These results are calculated for a period of evaluation of 30 years since the implementation of the first phase of the project (2019).

Total savings (expressed in VAN to 2019 at 3%, Thousand Euros of 2016) of this line is the following:

SAVINGS (Thousand Euros of 2016)	5,778,232
Surplus of the Customer (by generated traffic)	697,189
Time Saving	1,915,172
Accidents Saving	522,440
Operating Cost Saving	1,514,149
Environmental Cost Saving	1,129,281



- Surplus of the Customer (by generated traffic)
- Time Saving
- Accidents Saving
- Operating Cost Saving
- Environmental Cost Saving

VALLADOLID- BURGOS- VITORIA H.S.L.



## TIME SAVING

Total hours saved along the 30 years of the study:

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousand hours saved	114,677	3,823



VALLADOLID- BURGOS- VITORIA H.S.L.

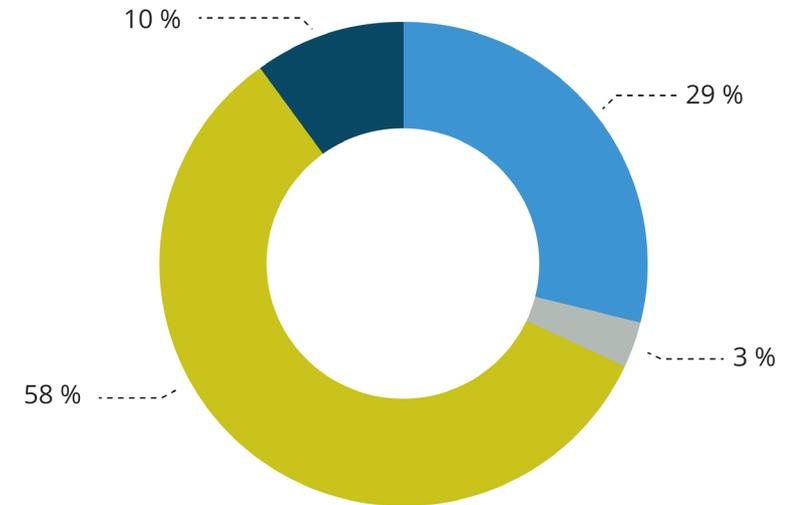


## MODAL TRANSFER

Below appears the summary of the Travelers.Km transferred of each means of transport and the graphic of percentages of modal transfer:

TRAVELERS.KM TRANSFERRED (THOUSAND)	TOTAL (30 YEARS)	ANNUAL AVERAGE
From private vehicle	17,281,210	576,040
From bus/coach	2,156,858	71,895
From conventional train	34,945,031	1,164,834
From airplane	6,014,088	200,470
<b>TOTAL</b>	<b>60,397,188</b>	<b>2,013,240</b>

On the other hand, it is important to highlight that from the total traveler's km in high speed, the 12.5% corresponds to the travelers induced. From the travelers transferred the greater percentage comes from the conventional train itself with a 57.9%, followed by the private vehicle with a 28.6%.



- From private vehicle
- From bus/coach
- From conventional train
- From airplane

VALLADOLID- BURGOS- VITORIA H.S.L.

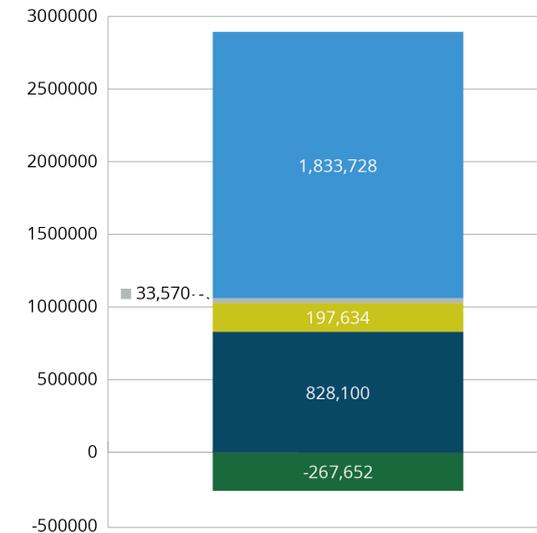


## SAVING OF TONS OF CO<sub>2</sub>

Savings of CO<sub>2</sub> by the Travelers.Km transferred from each mean of transport for the total of the analyzed period (30 years) are the ones below:

TONS CO <sub>2</sub> SAVED	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO <sub>2</sub> saved from private vehicle	1,833,728	61,124
Ton CO <sub>2</sub> saved from bus/coach	33,570	1,119
Ton CO <sub>2</sub> saved from conventional train	197,634	6,588
Ton CO <sub>2</sub> saved from airplane	828,100	27,603
Ton CO <sub>2</sub> issued from train	-267,652	-8,913
<b>TOTAL</b>	<b>2,625,652</b>	<b>87,522</b>

TOTAL TON CO<sub>2</sub> SAVED: 2,625,652



- Ton CO<sub>2</sub> saved from private vehicle
- Ton CO<sub>2</sub> saved from bus/coach
- Ton CO<sub>2</sub> saved from conventional train
- Ton CO<sub>2</sub> saved from airplane
- Ton CO<sub>2</sub> issued from train

# MADRID- GALICIA H.S.L.

## OLMEDO- ZAMORA- OURENSE SECTION



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- 5. MADRID- GALICIA H.S.L.: OLMEDO- ZAMORA- OURENSE SECTION**
6. ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR
7. CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)
8. MADRID-BARCELONA H.S.L.
9. CANTABRIA (PALENCIA – ALAR DEL REY) H.S.L.

MADRID- GALICIA H.S.L.

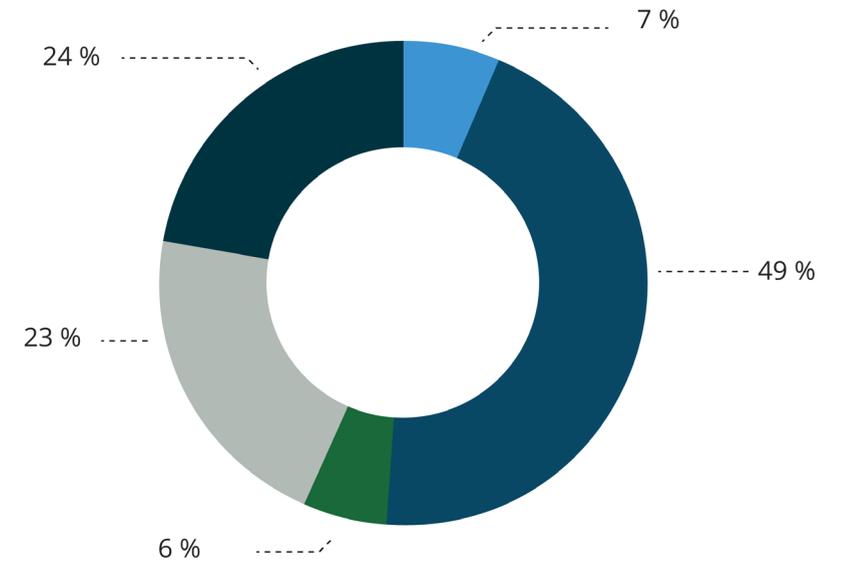


## SAVING OF EXTERNAL COSTS

These results are calculated for a 30 years period of evaluation since the implementation of the first phase of the project (2016).

Total savings (expressed in VAN at 2016 at 3%, Thousand Euros of 2017) of this line is the following one:

SAVINGS (Thousand Euros of 2017)	4,228,626
Surplus of the Customer (by generated traffic)	309,320
Time Saving	2,070,938
Accidents Saving	234,110
Operating Cost Saving	981,501
Environmental Cost Saving	632,756



- Surplus of the Customer (by generated traffic)
- Time Saving
- Accidents Saving
- Operating Cost Saving
- Environmental Cost Saving

MADRID- GALICIA H.S.L.



## TIME SAVING

Total hours saved along the 30 years of the study:

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousand hours saved	144,273	4,809



MADRID- GALICIA H.S.L.

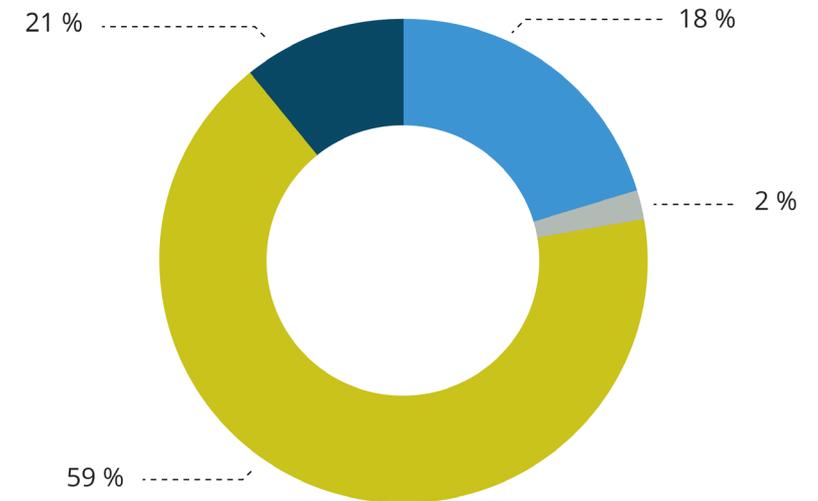


## MODAL TRANSFER

Below appears the summary of the Travelers.Km transferred of each means of transport and the graphic of percentages of modal transfer:

TRAVELERS.KM TRANSFERRED (THOUSAND)	TOTAL (30 YEARS)	ANNUAL AVERAGE
From private vehicle	7,052,230	235,074
From bus/coach	656,253	21,875
From conventional train	22,597,690	753,256
From airplane	8,112,106	270,404
<b>TOTAL</b>	<b>38,418,279</b>	<b>1,280,609</b>

On the other hand, it can be observed that from the total traveler's km in high speed, a 8.9% corresponds to the travelers induced. From the travelers transferred, the greater percentage comes from the conventional train itself with a 58.8%, followed by airplane with 21.1%.



- From private vehicle
- From bus/coach
- From conventional train
- From airplane

MADRID- GALICIA H.S.L.

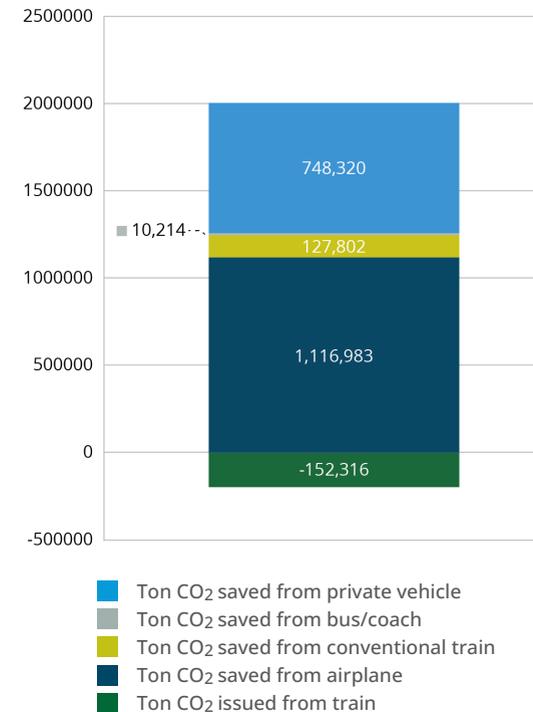


## SAVING OF TONS OF CO<sub>2</sub>

Savings of CO<sub>2</sub> by the Travelers.Km transferred from each mean of transport for the total of the analyzed period (30 years) are the ones below:

TONS CO <sub>2</sub> SAVED	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO <sub>2</sub> saved from private vehicle	748,320	24,944
Ton CO <sub>2</sub> from bus/coach	10,214	340
Ton CO <sub>2</sub> saved from conventional train	127,802	4,260
Ton CO <sub>2</sub> saved from airplane	1,116,983	37,233
Ton CO <sub>2</sub> issued from train	-152,316	-5,077
<b>TOTAL</b>	<b>1,851,003</b>	<b>61,700</b>

TOTAL TON CO<sub>2</sub> SAVED: 1,851,003



# ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR



1. INTRODUCTION
2. PREVIOUS CONSIDERATIONS
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5. MADRID- GALICIA H.S.L.: OLMEDO- ZAMORA- OURENSE SECTION
- 6. ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR**
7. CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)
8. MADRID-BARCELONA H.S.L.
9. CANTABRIA (PALENCIA – ALAR DEL REY) H.S.L.

## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR

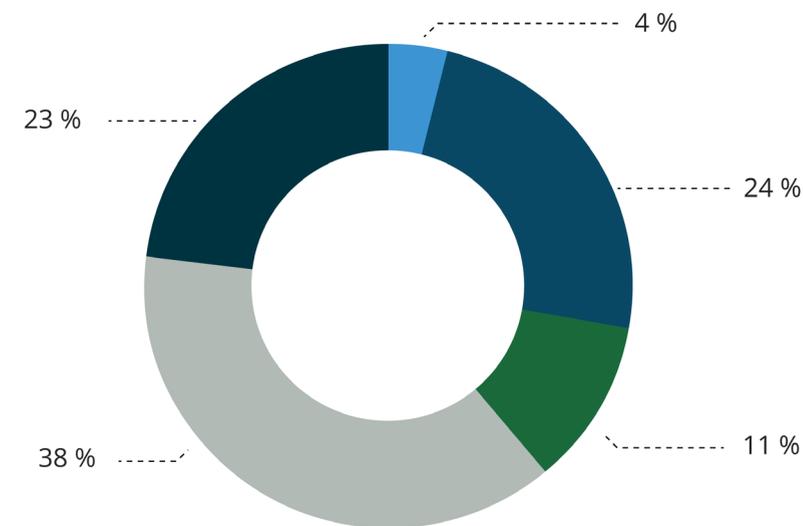


### EXTERNAL COSTS SAVINGS

These results are calculated for a period of evaluation of 30 years since the implementation of the first phase of the project (2016).

Total savings (expressed in VAN at 2016 at 3%, Thousand Euros of 2017) of this line is the one following:

SAVINGS (Thousand Euros of 2018)	15,137,189
Surplus of the Customer (by generated traffic)	503,824
Time Saving	3,668,240
Accidents Saving	1,713,326
Operating Cost Saving	5,767,174
Environmental Cost Saving	3,484,626



- Surplus of the Customer (by generated traffic)
- Time Saving
- Accidents Saving
- Operating Cost Saving
- Environmental Cost Saving

## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR



### TIME SAVING

Total hours saved along the 30 years of the study:

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousand hours saved	266,739	8,891



## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR

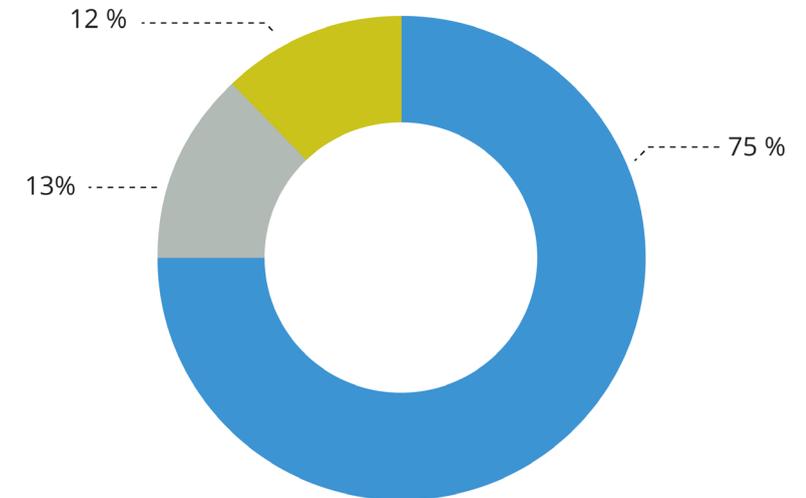


### MODAL TRANSFER

Below appears the summary of the Travelers.Km transferred of each means of transport and the graphic of percentages of modal transfer:

TRAVELERS.KM TRANSFERRED (THOUSAND)	TOTAL (30 YEARS)	ANNUAL AVERAGE
From private vehicle	68,313,874	2,277,129
From bus/coach	11,592,329	386,411
From airplane	11,250,575	375,019
<b>TOTAL</b>	<b>91,156,778</b>	<b>3,038,559</b>

It is important to highlight that, from the total passengers in high-speed Line, an 8.01% corresponds to induced travelers. And from the travelers transferred, the highest percentage comes from the private vehicle with a 74.94 % followed by the bus with a 12.72 %.



- From private vehicle
- From bus/coach
- From airplane

## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR

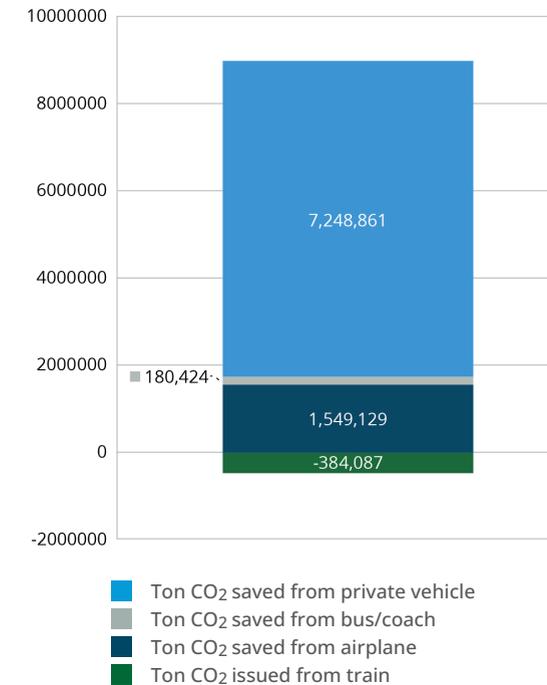


### SAVING OF TONS OF CO<sub>2</sub>

Savings of CO<sub>2</sub> by the Travelers.Km transferred from each mean of transport for the total of the analyzed period (30 years) are the ones below:

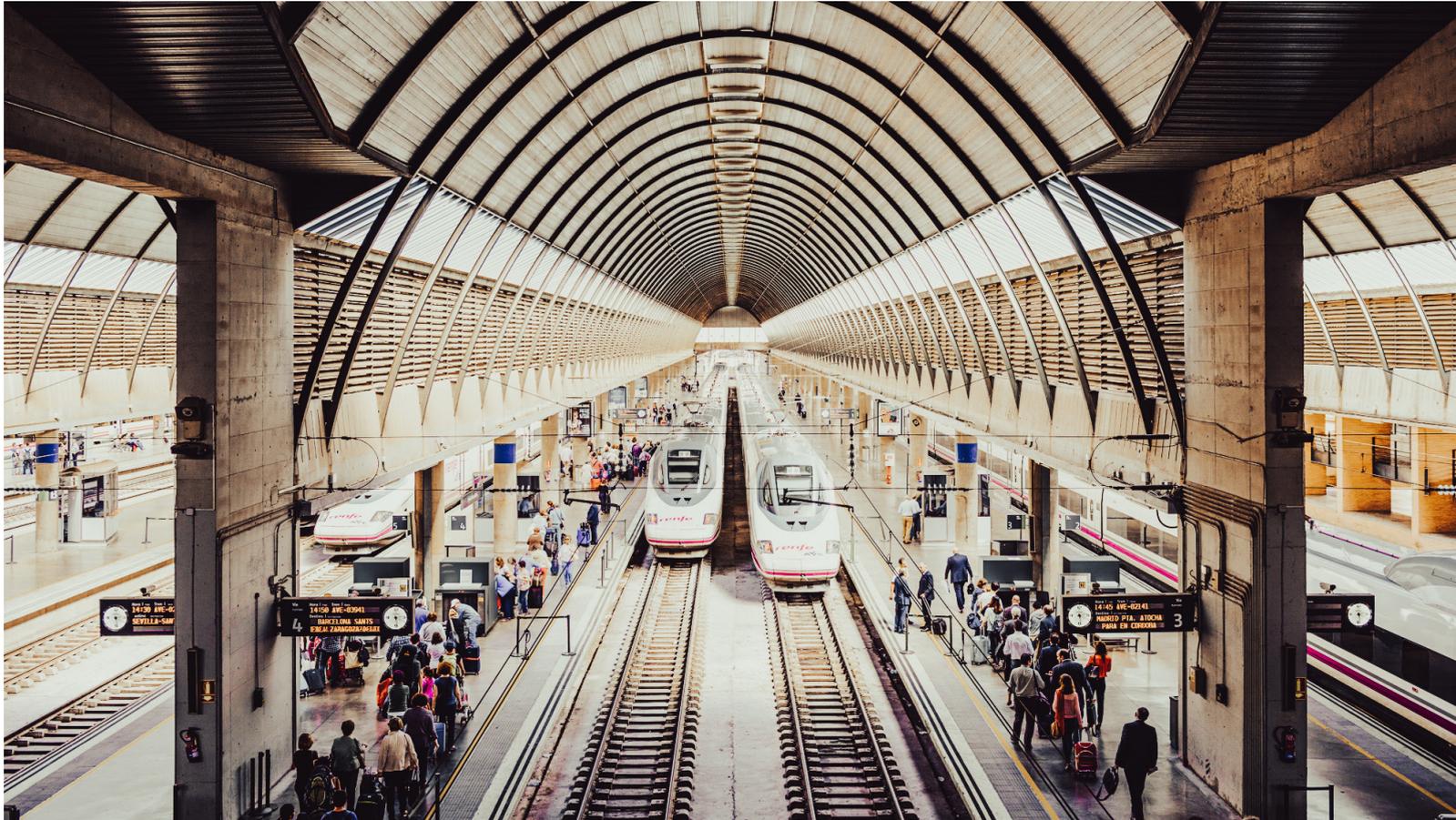
TONS CO <sub>2</sub> SAVED	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO <sub>2</sub> saved from private vehicle	7,248,861	241,629
Ton CO <sub>2</sub> saved from bus/coach	180,424	6,014
Ton CO <sub>2</sub> saved from concentional train	1,549,129	51,638
Ton CO <sub>2</sub> issued from train	-384,087	-12,803
<b>TOTAL</b>	<b>8,594,328</b>	<b>286,478</b>

TOTAL TON CO<sub>2</sub> SAVED: 8,594,328



# CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES

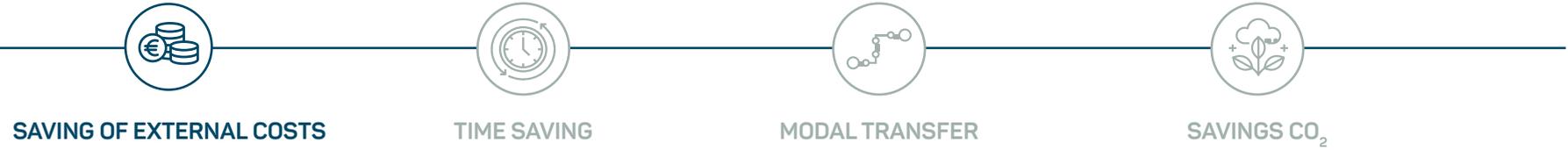
## AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)



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5. MADRID- GALICIA H.S.L.: OLMEDO- ZAMORA- OURENSE SECTION
6. ACTIONS NEEDED TO INCREASE THE CAPACITY OF THE HIGH-SPEED STATIONS PUERTA DE ATOCHA AND CHAMARTÍN CLARA CAMPOAMOR
- 7. CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)**
8. MADRID-BARCELONA H.S.L.
9. CANTABRIA (PALENCIA – ALAR DEL REY) H.S.L.

## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)

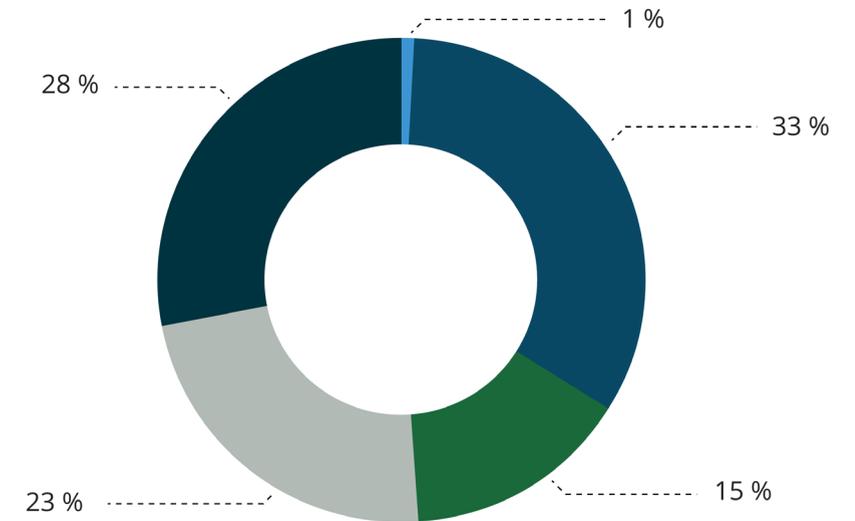


### EXTERNAL COSTS SAVINGS

These results are calculated for a given period of 30 years from the commissioning of the first phase of the project (2021).

Total savings (expressed in VAN at 2021 at 3%, Thousand Euros of 2017) of this line are the following:

SAVINGS (Thousand Euros of 2017)	372,251
Surplus of the Customer (by generated traffic)	4,113
Time Saving	121,665
Accidents Saving	54,312
Operating Cost Saving	87,672
Environmental Cost Saving	104,489



- Surplus of the Customer (by generated traffic)
- Time Saving
- Accidents Saving
- Operating Cost Saving
- Environmental Cost Saving

## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

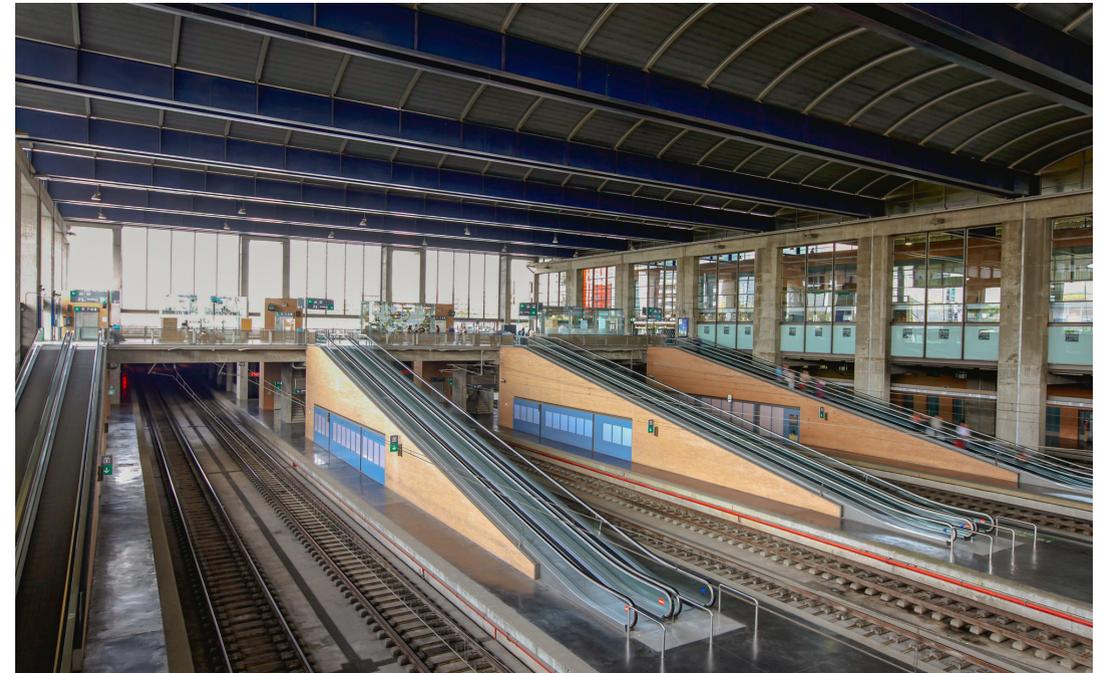
CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)



## TIME SAVING

Total hours saved along the 30 years of the study:

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousand hours saved	7,502	250



## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)

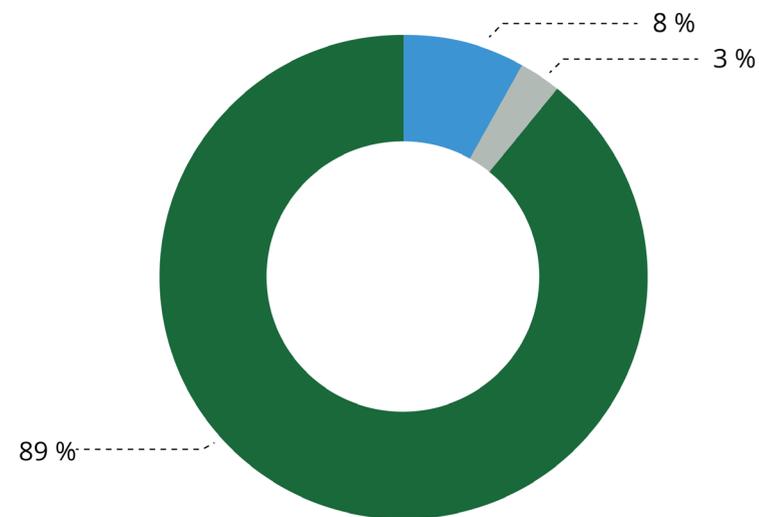


### MODAL TRANSFER

Below appears the summary of the Travelers.Km transferred of each means of transport and the graphic of percentages of modal transfer:

TRAVELERS.KM TRANSFERRED (THOUSAND)	TOTAL (30 YEARS)	ANNUAL AVERAGE
From private vehicle	989,309	32,977
From bus/coach	330,856	11,029
From train	10,670,855	355,695
<b>TOTAL</b>	<b>11,991,020</b>	<b>399,701</b>

It is important to highlight that, from the total passengers in High Speed Line, an 0.7% corresponds to induced travelers. And from the travelers transferred, the highest percentage comes from the train with an 89% followed by the private vehicle with an 8.3%.



- From private vehicle
- From bus/coach
- From train

## Category 1 Projects/ INDICATORS OF FORESEEN IMPACT BROKEN DOWN BY LINES

CONNECTION OF THE MADRID-SEVILLE AND CÓRDOBA-MÁLAGA HIGH SPEED LINES IN THE AREA OF ALMODÓVAR DEL RÍO (CÓRDOBA)

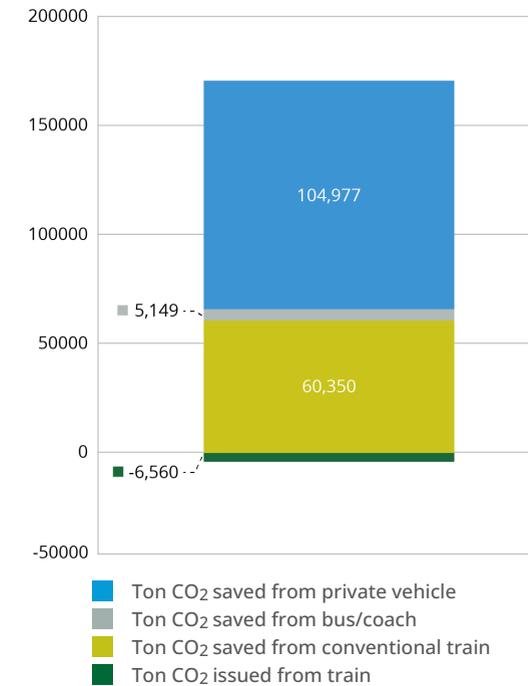


### SAVING OF TONS OF CO<sub>2</sub>

Savings of CO<sub>2</sub> by the Travelers.Km transferred from each mean of transport for the total of the analyzed period (30 years) are the ones below:

TONS CO <sub>2</sub> SAVED	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO <sub>2</sub> saved from private vehicle	104,977	3,499
Ton CO <sub>2</sub> saved from bus/coach	5,149	172
Ton CO <sub>2</sub> saved from conventional train	60,350	2,012
Ton CO <sub>2</sub> issued from train	-6,560	-219
<b>TOTAL</b>	<b>163,916</b>	<b>5,464</b>

TOTAL TON CO<sub>2</sub> SAVED: 163,916



## MADRID-BARCELONA H.S.L.



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- 8. MADRID-BARCELONA H.S.L.**
9. CANTABRIA (PALENCIA – ALAR DEL REY) H.S.L.

MADRID-BARCELONA H.S.L.

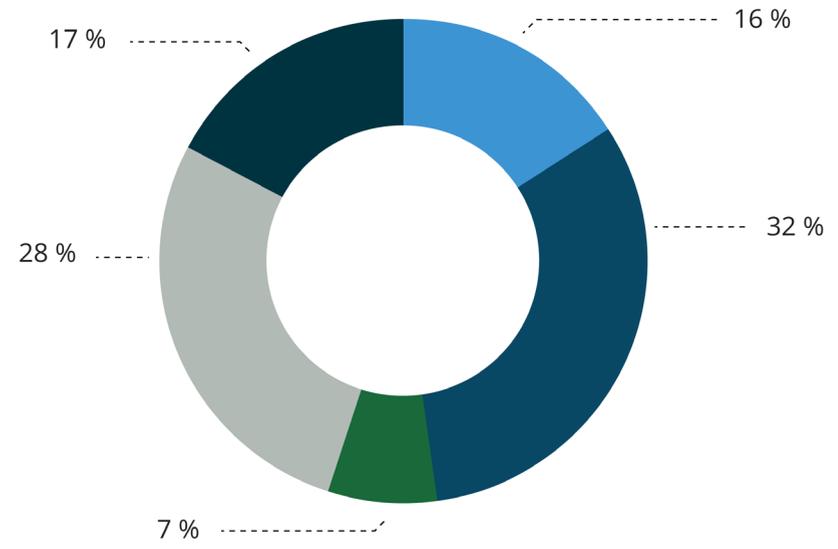


## SAVING OF EXTERNAL COSTS

These results are calculated for a period of evaluation of 30 years since the implementation of the first phase of the project (2004).

Total savings (expressed in VAN at 2004 at 3%, Thousand Euros of 2018) of this line is the following:

SAVINGS (Thousand Euros of 2018)	19,264,365
Surplus of the Customer (by generated traffic)	3,115,705
Time Saving	6,122,666
Accidents Saving	1,340,355
Operating Cost Saving	5,492,945
Environmental Cost Saving	3,192,693



- Surplus of the Customer (by generated traffic)
- Time Saving
- Accidents Saving
- Operating Cost Saving
- Environmental Cost Saving

MADRID-BARCELONA H.S.L.



## TIME SAVING

Total hours saved along the 30 years of the study:

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousand hours saved	346,659	11,555



MADRID-BARCELONA H.S.L.

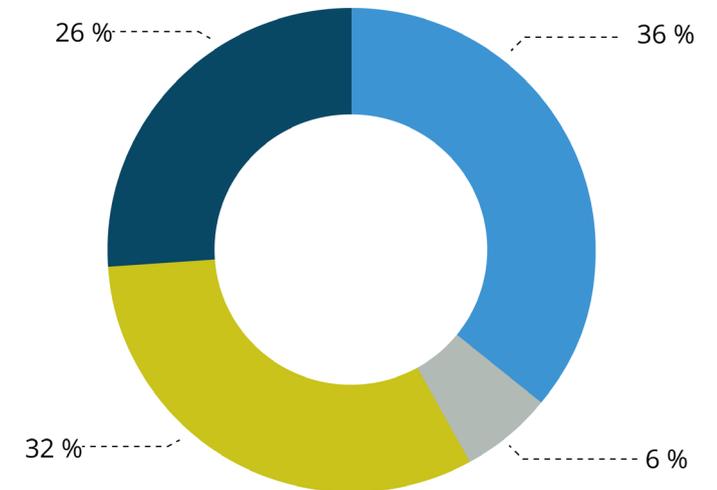


## MODAL TRANSFER

Below appears the summary of the Travelers.Km transferred of each means of transport and the graphic of percentages of modal transfer:

TRAVELERS.KM TRANSFERRED (THOUSAND)	TOTAL (30 YEARS)	ANNUAL AVERAGE
From private vehicle	48,039,219	1,601,307
From bus/coach	8,317,074	277,236
From conventional train	42,085,505	1,402,850
From airplane	33,798,437	1,126,615
<b>TOTAL</b>	<b>132,240,235</b>	<b>4,408,008</b>

It is important to highlight that, from the total passengers in high-speed Line, an 16.94% corresponds to induced travelers. And from the travelers transferred, the highest percentage comes from the private vehicle with a 36.3% followed by the conventional train with a 31.8%.



- From private vehicle
- From bus/coach
- From conventional train
- From airplane

MADRID-BARCELONA H.S.L.

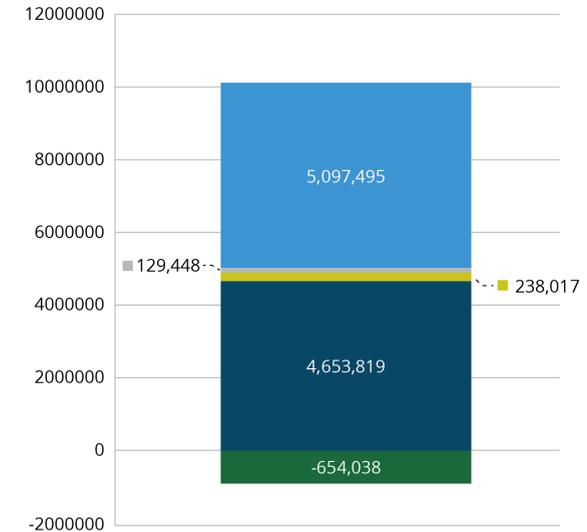


## SAVING OF TONS OF CO<sub>2</sub>

Savings of CO<sub>2</sub> by the Travelers.Km transferred from each mean of transport for the total of the analyzed period (30 years) are the ones below:

TONS CO <sub>2</sub> SAVED	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO <sub>2</sub> saved from private vehicle	5,097,495	169,916
Ton CO <sub>2</sub> from bus/coach	129,448	4,315
Ton CO <sub>2</sub> saved from conventional train	238,017	7,934
Ton CO <sub>2</sub> saved from airplane	4,653,819	155,127
Ton CO <sub>2</sub> issued from train	-654,038	-21,801
<b>TOTAL</b>	<b>9,464,741</b>	<b>315,491</b>

TOTAL TON CO<sub>2</sub> SAVED: 9,464,741



- Ton CO<sub>2</sub> saved from private vehicle
- Ton CO<sub>2</sub> saved from bus/coach
- Ton CO<sub>2</sub> saved from conventional train
- Ton CO<sub>2</sub> saved from airplane
- Ton CO<sub>2</sub> issued from train

# CANTABRIA H.S.L

## PALENCIA - ALAR DEL REY



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CANTABRIA H.S.L. / PALENCIA-ALAR DEL REY

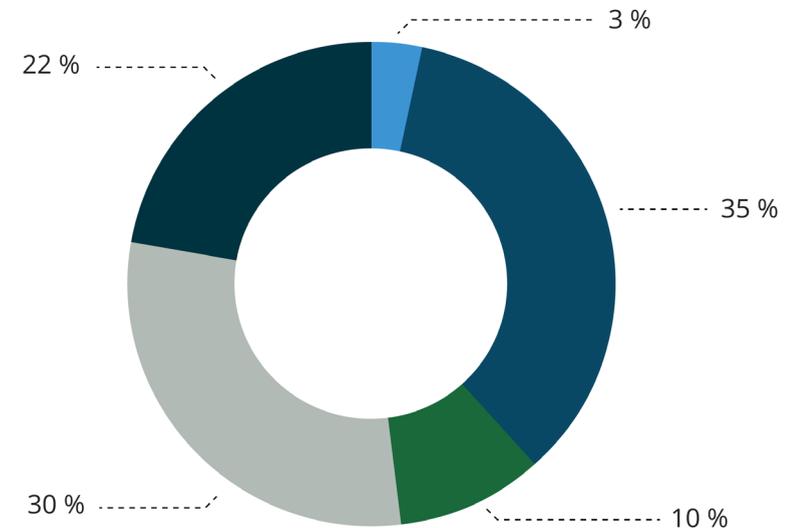


## SAVING OF EXTERNAL COSTS

These results are calculated for a period of evaluation of 30 years since the implementation of the first phase of the project (2015).

Total savings (expressed in VAN at 2021 at 3%, Thousand Euros of 2015) of this line is the following:

<b>SAVINGS (Thousand Euros of 2015)</b>	<b>699,856</b>
Surplus of the Customer (by generated traffic)	25,241
Time Saving	244,000
Accidents Saving	68,818
Operating Cost Saving	207,509
Environmental Cost Saving	154,288



- Surplus of the Customer (by generated traffic)
- Time Saving
- Accidents Saving
- Operating Cost Saving
- Environmental Cost Saving

CANTABRIA H.S.L. / PALENCIA-ALAR DEL REY



SAVING OF EXTERNAL COSTS



TIME SAVING



MODAL TRANSFER



SAVINGS CO<sub>2</sub>

## TIME SAVING

Total hours saved along the 30 years of the study:

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousand hours saved	17,064,328	568,811



CANTABRIA H.S.L. / PALENCIA-ALAR DEL REY

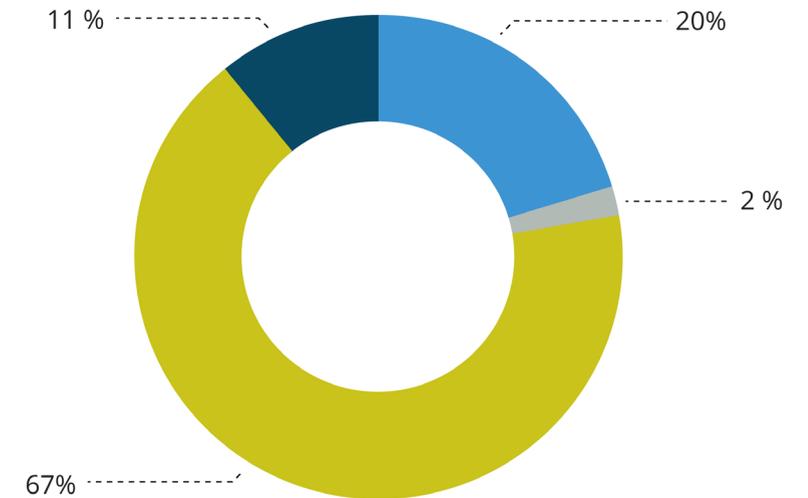


## MODAL TRANSFER

Below appears the summary of the Travelers.Km transferred of each means of transport and the graphic of percentages of modal transfer:

TRAVELERS.KM TRANSFERRED (THOUSAND)	TOTAL (30 YEARS)	ANNUAL AVERAGE
From private vehicle	2,015,136	67,171
From bus/coach	209,639	6,988
From conventional train	6,605,098	220,170
From airplane	1,060,382	35,346
<b>TOTAL</b>	<b>9,890,256</b>	<b>329,675</b>

On the other hand, it is important to highlight that from the total traveler's km in high speed, a 6.1% corresponds to the travelers induced. From the travelers transferred, the highest percentage comes from conventional train with a 66.8%, followed by the airplane with a 20.4%.



- From private vehicle
- From bus/coach
- From conventional train
- From airplane

CANTABRIA H.S.L. / PALENCIA-ALAR DEL REY

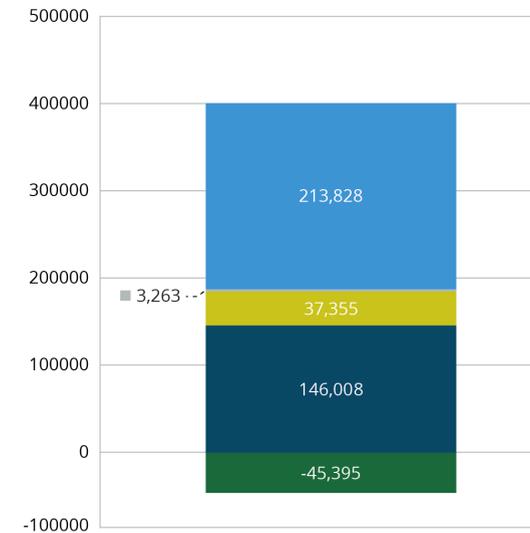


## SAVING OF TONS OF CO<sub>2</sub>

The savings of CO<sub>2</sub> by the traveler's km transferred from each mean of transport for the total of the analysis period (30 years) are the ones below.

TONS CO <sub>2</sub> SAVED	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO <sub>2</sub> saved from private vehicle	213,828	7,128
Ton CO <sub>2</sub> from bus/coach	3,263	109
Ton CO <sub>2</sub> saved from conventional train	37,355	1,245
Ton CO <sub>2</sub> saved from airplane	146,008	4,867
Ton CO <sub>2</sub> issued from train	-45,395	-1,513
<b>TOTAL</b>	<b>355,060</b>	<b>11,835</b>

TOTAL TON CO<sub>2</sub> SAVED: 355,060



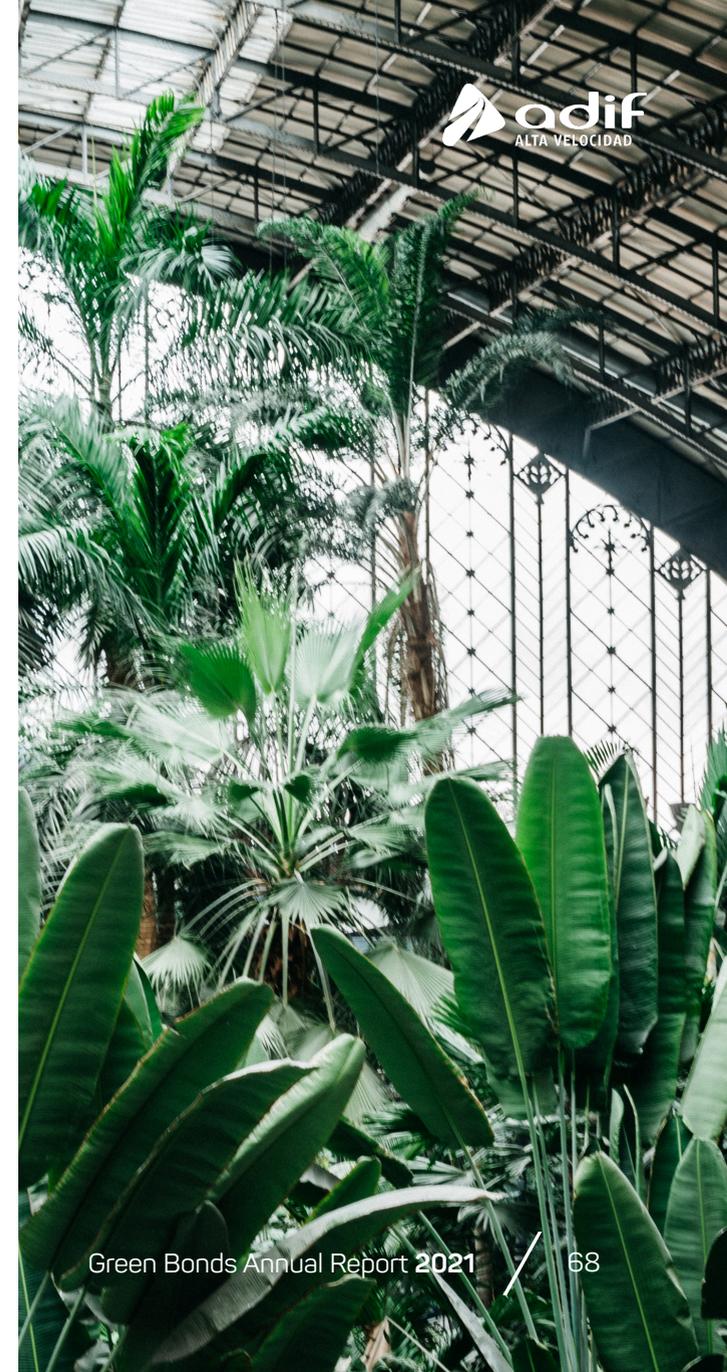
- Ton CO<sub>2</sub> saved from private vehicle
- Ton CO<sub>2</sub> saved from bus/coach
- Ton CO<sub>2</sub> saved from conventional train
- Ton CO<sub>2</sub> saved from airplane
- Ton CO<sub>2</sub> issued from train

# ALLOCATION OF FUNDS TO ELIGIBLE GREEN PROJECTS

As indicated at the beginning of this report, 43.32% of the net amount of the funds obtained from the fourth Green Bond of Adif Alta Velocidad has been allocated to the first category of Eligible Green Projects established in our Green Financing Framework: "Investments related to new lines and expansions of existing lines".

This first category includes projects of construction of high-speed Lines which are already being executed or that are planned to be, as well as lines already put into service. The detail of such investments, performed during 2021 and 2022, is the following:

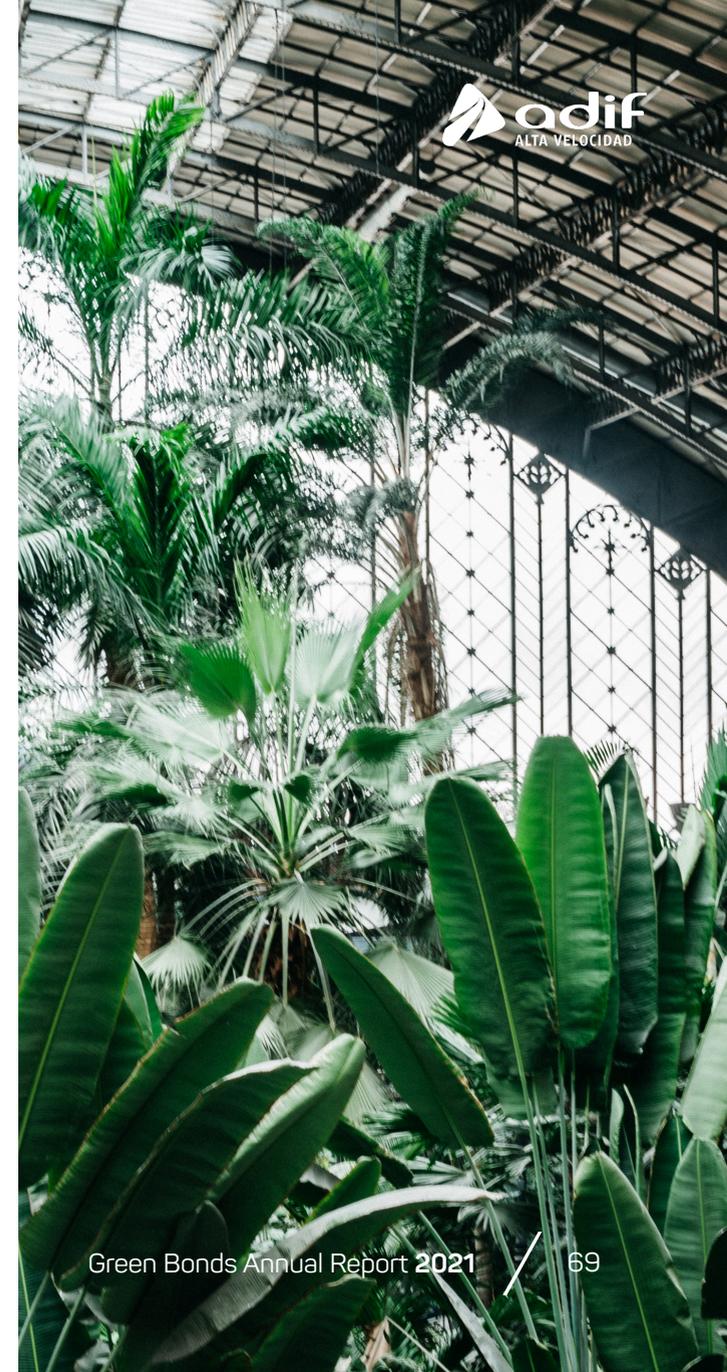
HIGH SPEED LINES	EXECUTED ELIGIBLE AMOUNT ACCORDING TO FRAMEWORK (THOUSAND EUROS)	FUNDING WITH GREEN BOND 2021 (THOUSAND EUROS)	GREEN BOND ALLOCATION (%)
VALLADOLID-BURGOS-VITORIA H.S.L.	27,170.77	16,486.52	2.76%
MADRID-GALICIA (OLMEDO-LUBIAN-ORENSE) H.S.L.	68,981.14	51,758.66	8.67%
MADRID-GALICIA (ORENSE BYPASS) H.S.L.	8,054.01	7,990.15	1.34%
CHAMARTÍN- ATOCHA- TORREJÓN UIC CONNECTION	60,551.21	56,104.39	9.40%
NORTH-END CHAMARTIN STATION	52,271.51	36,209.19	6.07%
MADRID-SEVILLA AND CÓRDOBA-MÁLAGA (ALMODÓVAR DEL RÍO) H.S.L. CONNECTION	8,579.82	6,128.60	1.03%
MADRID-BARCELONA-FIGUERAS H.S.L.	87,732.54	70,449.52	11.81%
CANTABRIA H.S.L.	20,385.70	13,335.05	2.23%
<b>TOTAL</b>	<b>333,726.70</b>	<b>258,462.07</b>	<b>43.32%</b>



## ALLOCATION OF FUNDS TO ELIGIBLE GREEN PROJECTS

In summary, the funds allocation corresponding to the Green Bond issuance in 2021 is as follows:

SUMMARY OF FUNDS ALLOCATION	FUNDED WITH GREEN BONDS (THOUSAND EUROS)	GREEN BOND ALLOCATION(%)
Category 1: High Speed Lines	258,462.07	43.32%
<b>TOTAL AMOUNT ALLOCATED</b>	<b>258,462.07</b>	<b>43.32%</b>
Funds pending allocation	338,237.93	56.68%
<b>NET AMOUNT GREEN BOND 2021</b>	<b>596,700.00</b>	<b>100.00%</b>



Green Bonds Annual Report 2021

# Annexes

## **INDEPENDENT ASSURANCE REPORT ON THE APPLICATION OF FUNDS SECTION OF THE GREEN BOND ANNUAL REPORT 2021**

### **Scope of the work**

We have performed a reasonable assurance engagement on the contents of Tables of the section "APPLICATION OF THE FUNDS TO ELIGIBLE GREEN PROJECTS" of the ADIF Alta Velocidad Green Bonds 2021 Annual Report (hereinafter, Application of Funds Section of the Green Bond Report), of ENTIDAD PÚBLICA EMPRESARIAL ADIF – ALTA VELOCIDAD, (hereinafter ADIF-AV or the Entity).

In particular, the specific aspects that we have confirmed about the aforementioned information are the following:

- That the net funds received by the Entity for the issuance of the Green Bonds, made on 8 October 2021, coincides with the net funds stated in Application of Funds Section of the Green Bond Report (596,700.00 thousands of euros).
- That the typology of the projects in which the investments have been materialized, stated in the Application of Funds Section of the Green Bond Report, corresponds to one of the two categories of "eligible green projects" indicated in the Entity's Green Financing Framework.
- That the total investment executed in 2021 and 2022 for the eligible green projects (333,726.70 thousand euros) as stated in the Application of Funds Section of the Green Bonds Report is higher than the funds used for the realization of said investment (258,462.07 thousand euros), corresponding to the Green Bonds issued on 8 October 2021, as stated in the aforementioned Application of Funds Section of the Green Bonds Report.

### **Inherent limitations**

Our assurance work has not included the evaluation of the risks of material misstatements due to fraud or error, nor the evaluation of the control environment, nor of the internal control implemented by the Entity for the adequate preparation and presentation of the information included in the Green Bonds Report.

### **Responsibility of ADIF-AV's Management**

The preparation of the Green Bond Report and its contents are the responsibility of ADIF-AV's Management, which is also responsible for establishing, implementing and maintaining the internal control and management systems where information is obtained.

## **Our responsibilities**

Our responsibility is to issue an independent assurance report, based on work performed in accordance with the provisions of ISAE 3000 "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board (IAASB) from the International Federation of Accountants (IFAC) for a reasonable level of assurance.

This standard requires planning and applying procedures to obtain sufficient evidence to reduce the risk of the assignment to an acceptably low level, according to the circumstances thereof, as a basis for expressing a conclusion.

For the purpose of this report, we have asked several questions to ADIF-AV management and ADIF-AV areas that have participated in the preparation of the Annex to the Green Bond Report, and we have carried out certain procedures, including, among others, the following:

- Obtaining and reading of the Application of Funds Section of the Green Bond Report issued by the Entity.
- Meetings with ADIF-AV's staff and management at a corporate level and at the level of its business of the Green Bonds projects, to ascertain the nature of the projects financed in the Application of Funds Section of the Green Bond Report and the correct allocation of the funds.
- Verify the cash receipts, in the bank account of the Entity, of the net funds received for the issuance of Green Bonds, made by the Entity on 8 October 2021, by reviewing the corresponding bank statements.
- Confirm that the typology of the projects in which the investments stated in the Application of Funds Section of the Green Bond Report has been materialized corresponds to one of the two categories of "eligible green projects" indicated in the Entity's Green Financing Framework.
- Documentation review of the main supporting documentation, we have verified that the total investment executed in 2021 and 2022 in the eligible green projects (333,726.70 thousand euros), stated in the Application of Funds Section of the Green Bonds Report, is higher than the funds used to make said investment (258,462.07 thousand euros) corresponding to the issue of Green Bonds made on 8 October 2021, as stated in the aforementioned Application of Funds Section of the Green Bonds Report.

We consider that the evidence which we have obtained provides an adequate basis for our conclusions, drawing attention to what is indicated in the section on inherent limitations.

## **Our independence and quality control**

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Control 1 (NICC 1) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

## Conclusion

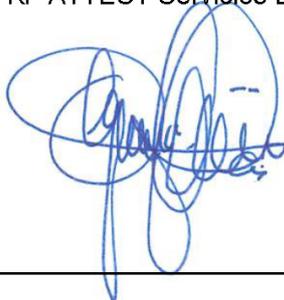
In our opinion, based on the procedures performed, we conclude that:

- 1) The net funds that ADIF-AV has received for the issuance of Green Bonds, made on 8 October 2021, coincides with the net funds stated in the Application of Funds Section of the Green Bond Report.
- 2) The typology of the projects in which the investments has been materialized, stated in the Application of Funds Section of the Green Bond Report, corresponds to one of the two categories of "eligible green projects" indicated in the Entity's Green Financing Framework.
- 3) The total investment executed in 2021 and 2022 in eligible green projects (333,726.70 thousand euros), stated in the Application of Funds Section of the Green Bonds Report, is higher than the funds used for the realization of said investment (258,462.07 thousand euros) corresponding to the Green Bonds issue made on 8 October 2021, as stated in the aforementioned Application of Funds Section of the Green Bonds Report.

## Other matters

This work does not constitute an audit of accounts nor is it subject to the regulations governing the audit activity in force in Spain, and therefore we do not express an audit opinion in the terms provided in the aforementioned regulations.

PKF ATTEST Servicios Empresariales, S.L.



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Alfredo Ciriaco

13 December 2022

