Green Bonds Annual Report 2020

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adif ALTA VELOCIDAD

LETTER

FROM THE CHAIRWOMAN

Orienting our actions to improve the efficiency and reliability of the existing network

The year 2020 has meant for Adif Alta Velocidad the recognition of our commitment to the **sustainable financing strategy** that began six years ago.

This recognition materialized in the success of the issue carried out at the beginning of last year, specifically on January 29.

On that date, Adif Alta Velocidad launched its **fourth green bond issue**, amounting to 600 million euros, with a 10-year term and a coupon of 0.55%. The spread over the Spanish Treasury Bond was reduced to 23 basis points.

This issuance represented the consolidation in the market of Adif Alta Velocidad as a **benchmark sustainable public issuer**, having obtained the highest number of offers from investors of the seven transactions carried out since 2014, which represents a growth of 54% compared to the offers received in the issue carried out in April 2019. Regarding the amount of the offers received, it has meant a final oversubscription of 6.5 times, which is also a milestone for the entity.

Likewise, the growth of the participation of **international investors** deserves to be highlighted, with 77% of the total, compared to 67% achieved in April 2019, being of note the presence of German and French investors.

At the same time and continuing with the trend of previous issues under the "green bond" label, the participation of **socially responsible investors** (SRI) was 55% of the total.

At the same time, from Adif Alta Velocidad we have continued with our commitment to **transparency and information to investors**, publishing periodic newsletters with updated contents of financial information and ESG policies of the entity. In the same vein, I am pleased to present below the **2020 Green Bonds Annual Report** of our entity, the fourth of those published to this date.

We cannot ignore the context in which we have found ourselves for approximately a year, in which our entity has directly suffered the impact of the health crisis derived from the Covid-19 pandemic as a result of limited mobility. In this context, the relevance of **sustainability in the economic recovery** has been reinforced.

In line with the objectives of the Ministry of Transport, Mobility and Urban Agenda, we take into consideration the need to adapt to the new paradigms of **sustainable mobility**, orienting our actions to improve the efficiency and reliability of the existing network, to promote intermodality and to continue advancing in the creation of a single, interoperable and resilient European railway area.

The European Green Deal establishes the key elements that should structure climate action so that the European Union can become a carbon neutral and competitive economy by 2050. Rail transport is the mode of collective transport with lower emissions per passenger and, therefore, plays a decisive role in the fight against climate change.

The **promotion of the railway** as the backbone of national transport and sustainable mobility policies will make it possible to achieve the objectives set by the European Union and those established by the international community.

Based on the above, and the gradual development, standardization and increase of options within **sustainable financing instruments**, we understand that the sector will continue to be a fundamental player in this market in the immediate future.

Isabel Pardo de Vera Posada

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.

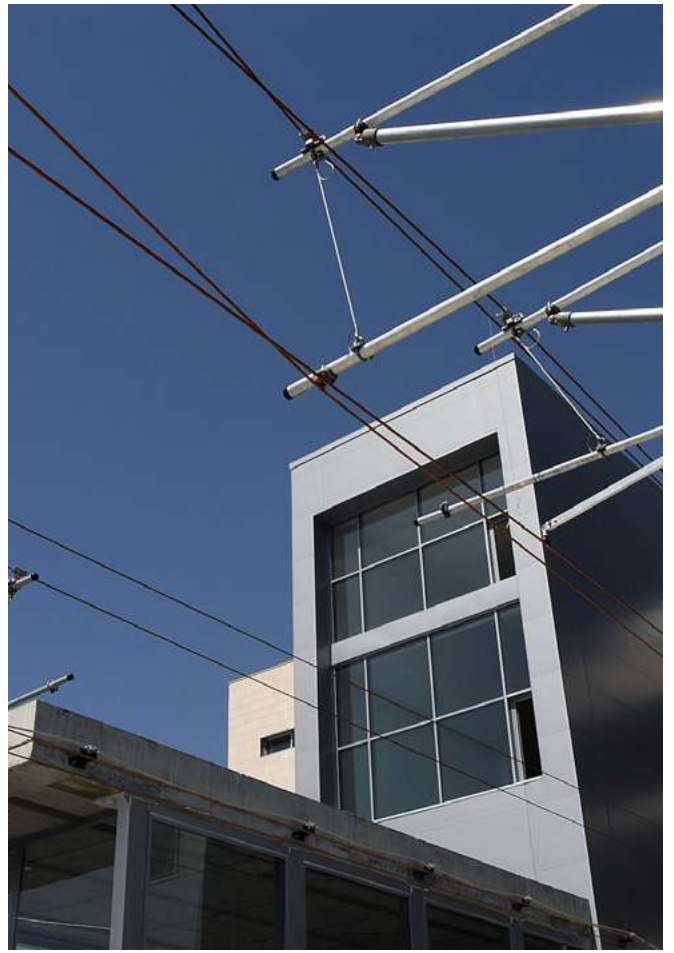
Regarding local challenges, the demands and expectations of our stakeholders are summarized in that we must contribute to a safe, efficient and sustainable transport system.

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

In this context, Adif Alta Velocidad has drawn up a Strategic Plan that adapts the entity's strategic lines to the major environmental, social, operational and business challenges that it must face in the coming years. Said Plan is based on four cornerstones: safety, service, sustainability and results orientation. Likewise, it has three levers to accelerate the transformation process: communication, innovation and digital transformation. All of the above taking into account that people are the engine to develop these cornerstones and operate these levers. The cornerstones and levers are deployed in different strategic objectives around which the entire organization is aligned.

Within this strategic framework, Adif Alta Velocidad maintains a strong commitment to SUSTAINABILITY, since its entire strategy is aligned with the United Nations Sustainable Development Goals (SDG), which are material for the entity, in addition to contemplating in the Plan specific strategic objectives that seek to improve our impact on society from an economic, social, environmental and good corporate governance point of view.

Thus, for example, the strategic Objective designated "Environment and climate" of the Strategic Plan of Adif Alta Velocidad seeks to "contribute to transportation that is respectful to the environment and responsible in the use of resources". In order to achieve this, initiatives have been designed to fight against climate change, adding projects of circular economy, applying criteria of ecologic purchase and strengthening the system of environmental vigilance and impact control.



More specifically, regarding our contribution to the ODS, **the construction and maintenance of High-Speed lines**, **as well as the projects intended to improve the energetic efficiency of the railway system and to promote its sustainability**, **to which the resources obtained with the emission of green bonds have been assigned**, have a positive impact on the following Goals and Targets of Sustainable Development of the Agenda 2030 of the UN:

"Resilient infrastructures, inclusive and sustainable industrialization, innovation"

Target 9.1: "Develop reliable, sustainable, resilient and quality infrastructures, included regional and cross-border infrastructures, to support the economic development and human well-being, supporting in particular the affordable and equitable access for everyone". The high-speed railway lines are built with the highest standards of quality to ensure its resilience and reliability; in addition, strict criteria of sustainability and respect to the environment are applied for their construction and maintenance, establishing environmental vigilance measures which ensure the preservation of natural, cultural and archeological heritage.

"Sustainable cities and communities"

Target 11.a: "To support the economic, social and environmental positive links between the urban, peri-urban and rural areas, strengthening the planification of national and regional development". The high-speed railway lines improve substantially, in a planned manner, the connection between the urban, peri-urban and rural areas, facilitating the generation of economic and social links, ensuring opportunities of growth and well-being. On the other hand, the projects which lead to improve the environmental sustainability of the infrastructures, such as for example those which contribute to minimize the impacts of noise in populated areas, allow as well to contribute to achieve this ODS.

"Fight climate change and its effects"

Target 13.1: "Strengthen resilience and adaptive capacity to climate-related risks and natural disasters in all countries". Since 2020, new railway infrastructure projects that require European funding are being prepared including a risk and adaptation to the effects of climate change analysis, thereby improving the resilience of the high-speed infrastructures that are being built.

Target 13.2: "Add measures related to the climate change in the policies, strategies and national plans". The development of the high-speed network will lead to significant quantities of road and air traffic transferring to the railway, being this one the mode of transport which generates the least emissions of CO2 and other greenhouse gas effects, thus fighting climate change through a better contribution of the transport sector to the fight against this phenomenon. Likewise, the projects intended to improve the energetic efficiency are associated with a decrease of emissions of CO2, in such a manner that they are also a tool for the fight against climate change.

As a following step within this strategic approach, Adif Alta Velocidad has approved the **MASTER PLAN TO COMBAT CLIMATE CHANGE 2018-2030**, which has as main objective to increase the contribution of the entity to this environmental challenge, as well as the one of the railway system within the whole national transport field.

Thus, the main landmarks to be achieved with the Plan are embodied in **three fields**:

Mitigation

In the field of mitigation, with the main objective of improving the energetic efficiency and to decrease the greenhouse gas emissions (GGE):

- Reduce the energetic consumption of the railway system to 2.900 GWh accumulated in the term 2018-2030.
- Reduce the GGE to about 9.000 ktCO2eq accumulated in the term 2018-2030, with the implementation of the projects included in the Plan, plus the emissions avoided by the modal transfer. This reduction would achieve 12.000 ktCO2eq if the purchase of green electric energy is taken into account.
- Reduce the ADIF and ADIF Alta Velocidad carbon footprint by at least more or less than 25% in 2030, in relation to the value in 2016, and up to 86% if the purchase of green electric energy is taken into account (with certificates of Guarantee of Origin -GdO-). Our commitment is to achieve carbon neutrality by 2050 as the maximum horizon.

Adaptation

In the field of adaptation, with the aim of improving the resilience of the railway infrastructures:

- Include the evaluation of vulnerability on the adverse effects of climate change in 100% of the great railway projects since 2020.

Culture and sensibilization

In the field of culture and sensibilization, seeking to increase awareness of the groups of interest both internal and external through different actions, such as for example:

- Include clauses related to climate change in 100% of the procurement specifications since 2025.

In order to achieve these targets, the Plan is structured around five main lines of action: energy management, energetic efficiency, decarbonization and renewable energies, improvement of resilience and culture and sensibilization which, at the same time, involve different programs and specific projects with different scopes. It is a living document which will be reviewed periodically in order to update its content and to adjust the established targets.

With this Plan, Adif Alta Velocidad is aligned 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 2030 Agenda (specifically Goal No. 13 “Action for the Climate”) as well as the pact reached by the signatory countries with the Paris Agreement.

Likewise, it is in line with current European and national policies aimed at achieving climate neutrality by 2050, as set out in the Green Pact of the European Commission.

FRAMEWORK

Adif Alta Velocidad updated its green financing framework in September 2019. This document is an evolution of the one established in June 2017, which was born in line with ICMA's Green Bonds Principles (GBP), with the aim of guaranteeing the transparency, disclosure and integrity of its Green Bond issues. The aforementioned framework is available on the Adif Alta Velocidad website.

This new framework is not only aligned with the ICMA GBP, but also with the Green Loan Principles of the LMA (Loan Market Association). This shows the commitment and willingness of Adif Alta Velocidad to use bonds, loans or any other source of financing for environmentally respectful projects that meet the requirements to be eligible, in accordance with the stipulations in the document.

Adif Alta Velocidad requested, both in the initial framework and in its update, a Second Opinion issued by CICERO, which granted a "DARK GREEN" rating, including in the update a rating of "Excellent" to the corporate governance procedures.

This Opinion is also available on the Adif Alta Velocidad website.

The framework includes the five components included in the GBP:

- Use of proceeds
- Eligible green projects
- Selection process
- Management of the funds
- Reports

USE OF PROCEEDS AND ELIGIBLE GREEN PROJECTS

The proceeds from the issuance of green bonds are assigned to Eligible Green Projects, which include new projects and continuation of projects in progress, with disbursements of up to 2 years before the issuance of the bonds and up to 24 months from the date of said issue. Specifically, your destination includes two categories:

1) Investments related to new high-speed railway lines and extensions of the current high-speed lines.

2) Investments related to the maintenance, update and energy efficiency of the rail system.

FRAMEWORK

SELECTION PROCESS

95% of the funds obtained with the **fourth green issue**, carried out on February 12, 2020, have been allocated to category 1 projects.

Particularly, the funds have been assigned to the following projects:

PROJECTS OF CATEGORY 1

MADRID-LEVANTE HIGH-SPEED LINE (It includes Chamartín - Atocha - Torrejón de Velasco connection)

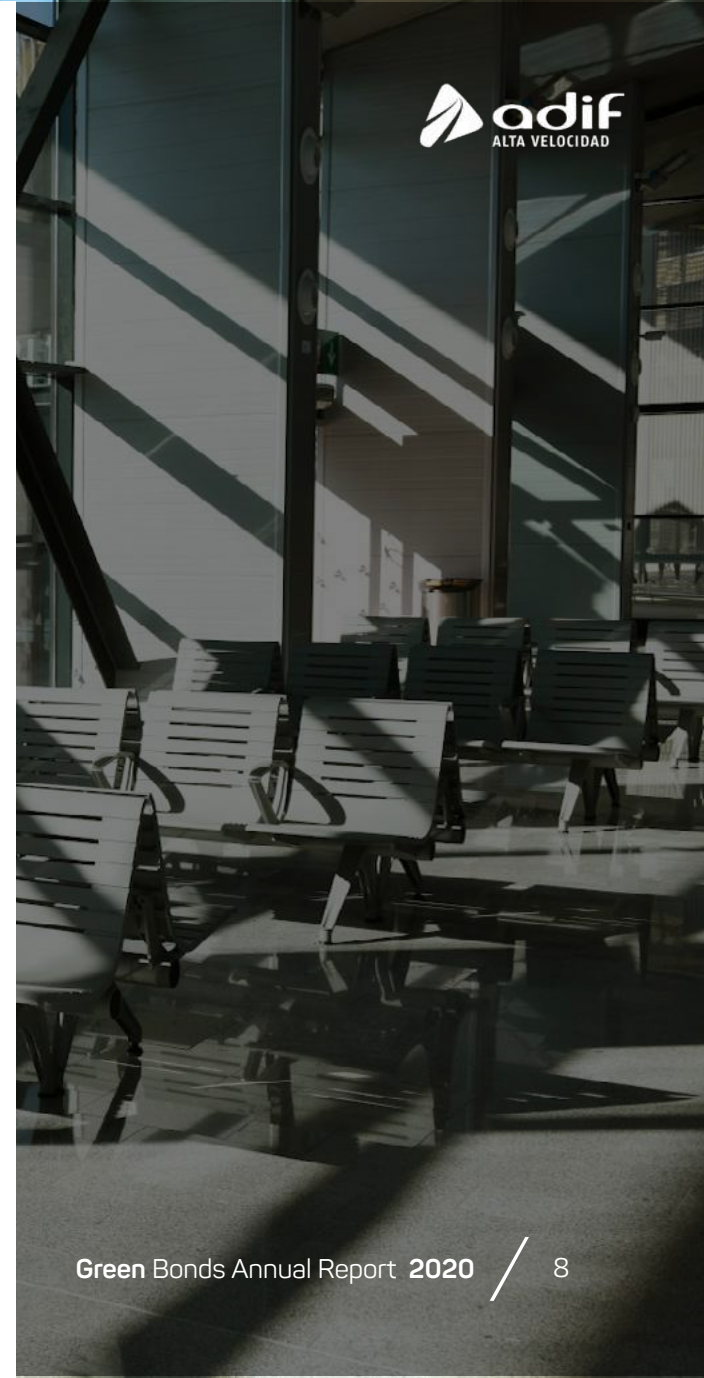
ANTEQUERA - GRANADA HIGH-SPEED LINE

VALLADOLID - BURGOS - VITORIA HIGH-SPEED LINE

MADRID - EXTREMADURA HIGH-SPEED LINE

MADRID - GALICIA HIGH-SPEED LINE / OLMEDO - LUBIÁN - ORENSE - SANTIAGO SECTION

ATLANTIC AXIS HIGH-SPEED LINE / SANTIAGO - VIGO SECTION



MADRID - LEVANTE HIGH-SPEED LINE

It includes Chamartín-Atocha UIC connection and the quadruplication Atocha- Torrejón de Velasco.

High speed line to Valencia and Alicante is currently in operation.

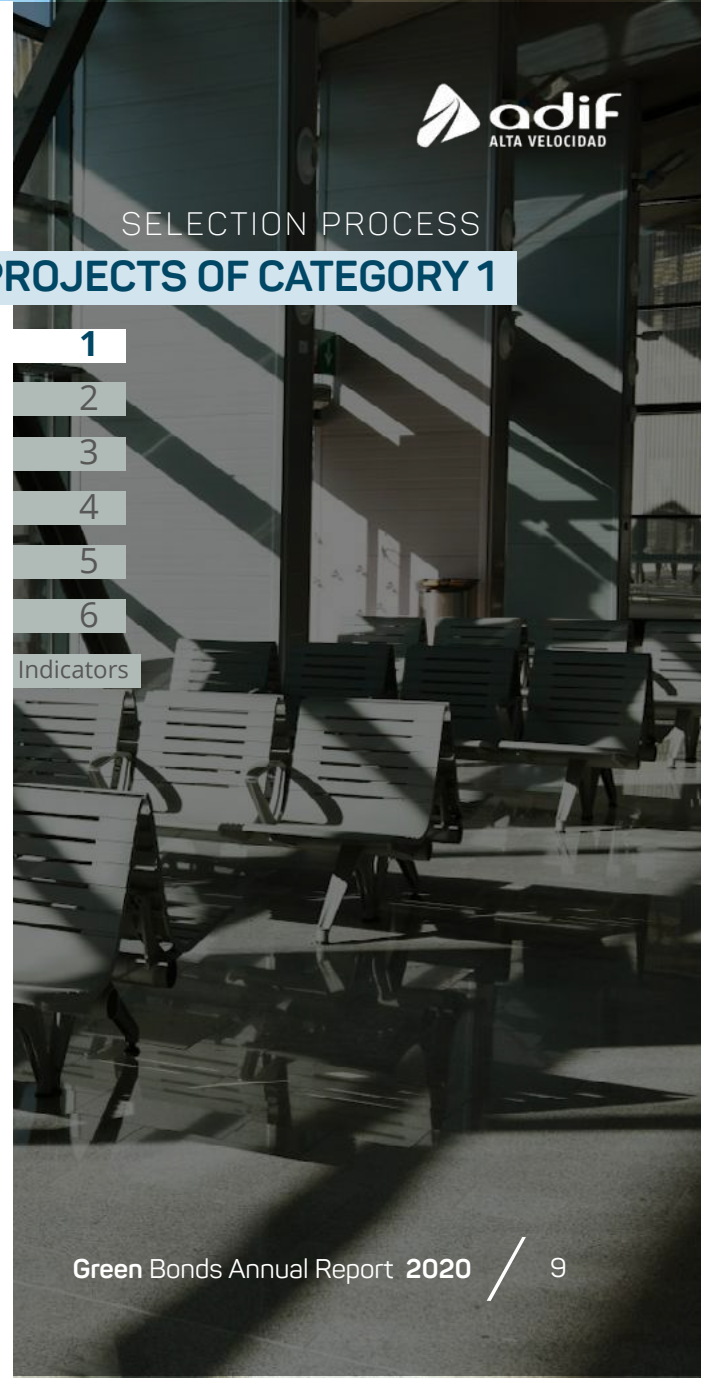
The implementation of the entire line will entail being able to perform the connection of the lines from the South and Levante of Spain with those from the North and the other way round, without travelers needing to transfer (the line Madrid-Barcelona-French Frontier will not use, at least for the time being, these accesses to Madrid). In order to be used, a new connection branch will be needed. Likewise, the inclusion of two new routes in the accesses of the corridors of high-speed Madrid-Levante and Madrid-Andalucía will allow to expand the capacity of the infrastructure.

The works consist of:

- The execution of a double-track tunnel with UIC standard width (7.3 km).
- The connection of the tunnel with the quadrupling of Atocha-Torrejón de Velasco stretch through a single track provisional tunnel (0.9 km). This tunnel goes under the current station of Atocha, and is used as a provisional connection between the tunnel and the new platform while there is no definitive tunnel which hosts the new underground ongoing station of Atocha.
- New platform between Atocha and Torrejón de Velasco with capacity for two new tracks.

During 2020, the test track have been made available, allowing the start, by the mid of the year, of the tests of ERTMS L1 System with real train, and the transitions of the systems from the rest of the lines which connect with the track (Madrid – Sevilla and Madrid – Valladolid high speed lines).

The electrification works on lines from 19 to 21 of Chamartín High-Speed have been continued, and acoustic protection and pile reinforcement works have been initiated. Once the test phase finish, definitive procedures will follow, allowing the implementation of the line simultaneously with the new high-speed connection tunnel between Atocha and Chamartín.



Similarly, works on the branches of Monforte del Cid-Murcia and La Encina-Xátiva-Valencia have continued.

The section Monforte del Cid-Murcia consists of 65 Km. The execution of these works will allow high speed transport of travelers until Murcia.

With the aim of highlighting the already done investments, decision have been made to divide the commercial commissioning of this track in two phases:

1. Commissioning of Monforte del Cid – Beniel section (approximately 54 km), with Orihuela station as its last commercial stop.

   During 2020 the works on this track have been finished; ERTMS tests with real train started in May and ended in December, and the request for commissioning is planned in January 2021.

2. Commissioning of Beniel – Murcia del Carmen section.

   This commissioning has been divided, at the same time, into two different tasks:

   - Commissioning of the new LC rail park in Murcia del Carmen.

     During 2020 this area has experienced a great advance both in their access and burying works, and its commissioning is planned through a circulation scheduled stop in March 2021.

   - Commissioning of Beniel – Murcia del Carmen section with ERTMS L2.

     This operation will start with the ending of the activities of the previous phase.

During the year 2020 the works in the section Monforte del Cid and Beniel were concluded, with the commissioning taking place on 1st February.

Finally, during 2020 and 2021 the works of execution of phase I of the accesses to Murcia have continued and the phase II actions have been continued (including the burying of the station).

FRAMEWORK

As main cornerstones in 2020 we highlight the following ones:

- Progress also during this year in the construction of the access tunnel to the station of Murcia.
- Continuation of the works corresponding to the burying of the station, Barriomar and Nonduermas.
- During 2020 and until 1st February 2021, date of its commissioning, Monforte-Beniel Line works have been developed.

Likewise, the works in the sections Monforte del Cid-Murcia and La Encina-Xátiva-Valencia have been continued.

The ongoing works in the section La Encina-Xátiva-Valencia will allow high speed passenger transport, maintaining a conventional railway line shared with freight and medium distance and commuters traffic. In 2019 the conventional width line between Alcudia de Crespins and Mogente in Valencia was put into service, being this section part of the conventional width line Xátiva-La Encina.

ANTEQUERA - GRANADA HIGH-SPEED LINE

During 2019 the ERMTS L2 tests finished, concluding with the implementation of the line in summer 2019.

The achievement of these works will allow high speed traffic of passengers from the line Córdoba-Málaga, in service, until Granada.

Likewise, several works continue taking place to complete the following infrastructure:

Antequera – Santa Ana High Speed Station conventional width access:

This operation consists in a branch of 2.3 km length which, starting in the current track of the line Bobadilla-Granada through a detour, goes on in parallel and very near to the High Speed platform, until arriving to the southern platform of the High Speed Station of Antequera. The solution adopted allows travelers from the trains who circulate through the conventional line to be able to change to the High Speed Line through a transfer in Antequera Station. Under execution since March 2019.

Antequera Station:

Under execution since March 2019.

Platform Project. Section.
Viaduct over Railway Bobadilla-Granada – Variante de Loja. Río Frío.

1.7 Km of platform designed for double track which goes along the municipality of Loja. Under execution since October 2019.

Granada's Transport Exchanger:

The objective of this infrastructure is improving the simultaneous use of both conventional width and high speed line, allowing the connection of Madrid – Granada HSL with Almería's conventional line. In addition, the location of this exchanger (approximately 3 km from Granada Station) involves the construction of a mixed width track section between both infrastructures.

Execution of this works started in June 2019, while the start of the signaling and communication infrastructures works is planned in February 2021. This mixed track section will have also installed ERTMS L2, GSM-R and the necessary adaptation of Traffic Regulation Centers.

Almódovar Bypass:

Awarded in 2019. Works started in July 2020.

This is a connection branch of approximately 1.7 km between PK364 of Madrid – Sevilla HSL and PK5 of Córdoba – Málaga HSL, that will exploit both lines' already installed exits (on Almodóvar and La Marota). With this new connection, Sevilla – Málaga/Granada circulations will benefit from an extra 20 minutes time saving.

Infrastructure works are already awarded since 2019 and got started in July 2020.

Regarding signaling and communications works, after the optimal technical solution have been decided, the processing of the Construction Project Contract and Execution of Works have been started, in coordination with works evolution of the project already under development.

VALLADOLID - BURGOS - VITORIA HIGH-SPEED LINE

The section between Valladolid and Venta de Baños is in service, having performed in 2019 the Implementation of the Level 2 of ERMTS between Valladolid and León, under construction between Venta de Baños and Burgos and without having started the works between Burgos and Vitoria.

The infrastructure works have continued, and track assembly, electrification and remote control, and security and communications installations, are now concluded, with the exception of the track assembly contract of the section Estépar-Burgos variant, where works are being carried on Rosa de Lima Station. The conclusion of this section will entail the high -speed connection of Burgos for passengers.

On Venta de Baños – Burgos section, works have been finalized to put in service the line with ASFA and side signaling system. Authorization from AESF was requested on 30th December 2019, and we are still waiting for it. At the same time, works on validation of ERTMS Level 2 system are ongoing.

It should be noted that the ASFA commissioning authorization that has been requested is not for commercial use, but rather for the homologation tests of Renfe's S106 vehicle.

FRAMEWORK

MADRID - EXTREMADURA HIGH-SPEED LINE

In the year 2020 platform works between Plasencia and Badajoz (with the exception of Mérida Bypass) were concluded. Likewise, the track assembly between Plasencia and Badajoz has finished (with the exception of track duplication between Cáceres and Mérida Bypass). According to the foreseen program, the platform works between Talayuela and Badajoz continued (with the exception again of Mérida Bypass). Between Talayuela and Plasencia the platform sections Casatejada – Toril, Toril – Rio Tiétar and Río Tiétar – Malpartida de Plasencia have been awarded. The section Malpartida de Plasencia – Plasencia Station – Platform has been awarded. The remaining projects still continue. The track assembly between Talayuela and Casatejada (with the exception of Navalmoral) has been awarded.

The projects of track renewal, adaptations and connections between Monfragüe and Plasencia are still in tendering stage, while the renewal of accesses to the stations of Cáceres, Mérida, Aljucén and Badajoz are in project phase; in addition, the project of duplication of tracks between Cáceres and Mérida has started.

Likewise, during 2020 the execution of the contract of the electric substations of traction and transformation centers in the section Plasencia Badajoz has started; areas of Cañaveral, Carmonitas and Sagrajas and catenary in phase I.

Regarding the installations, during 2020 got into operation the new electronic interlocking infrastructures for the tracks Mérida – Badajoz and Cáceres Station, and we are still carrying civil works execution and infrastructure assembly for the Plasencia – Cáceres section. On January 2021, the awarding of the contract for the adaptation of the installations to electrified double track, Mérida Bypass and new configuration of Cáceres, Mérida, Aljucén and Badajoz stations (including access to the new logistic platform) is planned.

The execution of the installations of civil protection and security in tunnels continues, as well as the ones of the installations of security and communications, and the GSMR between Plasencia and Badajoz. The projects of architectonic actions in the stations of Cáceres, Mérida, Plasencia and Badajoz are under execution.

This line has been designed so that the traffic that circulates along the same is apt for passengers and freight.

MADRID - GALICIA HIGH-SPEED LINE

Olmedo - Lubián - Orense Section

The section between Olmedo and Zamora and Zamora – Pedralba de la Pradería are currently in ASFA service, and the last section of Pedralba-Ourense track is under construction.

The implementation has been done as the different sections have been finalized. This year, the Zamora – Pedralba section has been put into service, finalizing the track between Pedralba and Ourense. This line has been designed with passenger traffic in mind.

Olmedo-Zamora:

This 99 km section was implemented under ASFA technology on 17th December 2015 (20 viaducts stand out as most representative elements of this section, adding a length of 4.66 km). During 2018, the remodeling works of the station of Zamora were concluded. In 27 October 2020, ERTMS L2 system have been put into service on this section, as well as in line 1 between Olmedo and Medina del Campo.

Zamora-Pedralba de la Pradería:

110 km length, the route comprises five subsections, all of them concluded and received, the most characteristic singular works being: 7 tunnels (4.5 km) and 14 viaducts (4 km). During 2020 all CMS works and tests have been finalized (for signaling and communication, both fixed and mobile through GSM-R), obtaining authorization for commercial commissioning from AESF on 27 October 2020, so the section has been put into service with train protection systems ERTMS L2 and ASFA.

The work of Civil Protection that remained pending of the authorization of INDUSTRY in order to perform the due electricity supply have been finished, and the tests of integration of equipment in the CPS of León have been performed. Also, the tests of structural monitoring and the procedures to put the line at the disposal of Circulation have been completed. In 2020 works in Puebla de Sanabria Station were carried out, and the renewed Sanabria HS station is finalized and pending of procedures for its imminent entry into service.

Pedralba de la Pradería-Ourense:

It has 22 subsections. The tunnels predominate in the layout, reaching a total length of 125 km, with 9.4 km of viaducts.

Before 2020 16 subsections were concluded, and another 6 in 2020. Likewise, works on Miamán assembly bases and track assembly have been concluded, continuing with the works for the construction of the maintenance facility of Mezquita, overhead contact line and associated systems, self-transformation centers and energy remote control, and protection and security facilities in tunnels.

During 2020, most of CMS field works have been executed (both for signaling and fixed and mobile (GSM-R) communications), and internal tests of ERTMS L2 system with real train are planned for mid 2021. Works affected to conventional network are also finished. Finally, the execution of the new station of high speed of the station Puerta de Galicia is currently continued.

Taboadela-Ourense (14 km along current corridor + 2 km of connection branch):

During 2020, the works initiated in 2018 (connection branch in Taboadela and remodeling of the station of Ourense through adaptation of tracks and platforms) and 2019 (Taboadela – Ourense's implementation of the third rail and infrastructure and Taboadela changer, track assembly in connection branch, remodeling of the station of Taboadela, and the supplementary actions Taboadela-Ourense for platform adaptation) have continued. On the other hand, and with the contracts in common with the ones in the previous section, the installations of overhead contact line and associated systems, self-transformation centers and the signaling facilities are progressing. At a CMS contract level (signaling and telecommunications through fixed and mobile GSM-R lines), Pedralba – Taboadela and Taboadela – Ourense sections are considered as the same, so the information on the previous section is for application also on this one.

FRAMEWORK

ATLANTIC AXIS HIGH-SPEED LINE
Santiago de Compostela - Vigo Section

This line is currently in service.

The investment performed corresponds mainly to platform works and update of the signaling system. The line is apt for passengers and freight traffic.

INDICATORS

Below, a summary of the indicators studied for each of the chosen projects:

SAVINGS

	EXTERNAL COSTS (Thousand euros)	TIME (Thousand hours)		MODAL TRANSFER (Thousand travelers KM Transferred)		TONS OF CO_2 (Tons)	
	30 years	30 years	Annual average	30 years	Annual average	30 years	Annual average
Madrid - Levante HSL	18,196,280	283,178	9,439	95,507,061	3,183,569	3,898,322	129,944
Antequera - Granada HSL	2,783,655	56.478	1,883	26,727,956	890,932	1,360,089	45,336
Valladolid - Burgos - Vitoria HSL	5,778,232	114,677	3,823	60,397,188	2,013,240	2,625,652	87,522
Madrid - Extremadura HSL	4,190,579	28,886	963	27,653,706	921,790	4,270,103	142,337
Madrid - Galicia HSL (Olmedo-Zamora-Ourense Section)	4,228,626	144,273	4,809	38,418,279	1,280,609	3,839,225	127,974
Atlantic Axis Santiago de Compostela-Vigo Section	2,578,482	84,509	2,817	7,508,705	250,290	711,214	23,707
Atocha-Chamartín and Atocha-Torrejón de Velasco Connection	15,138,957	266,739	8,891	91,156,778	3,038,559	8,594,328	286,478
TOTAL	**52,894,811**	**978,740**	**32,625**	**347,369,673**	**11,578,989**	**22,420,545**	**747,352**

MANAGEMENT OF THE FUNDS

Until the total allocation of the net amount of the emission performed 12th February 2020 to Eligible Green Projects, ADIF-Alta Velocidad maintains temporarily invested the non-allocated funds in bank accounts.

The audit firm PKF Attest, contracted by ADIF-Alta Velocidad, has verified the method of internal monitoring and the allocation of the funds to Eligible Green Projects. The reports of the auditors are attached to this document.

REPORTS

Up to the full allocation of the proceeds obtained from the Green Bonds issued, Adif Alta Velocidad will publish the following information on its **web page** each year:

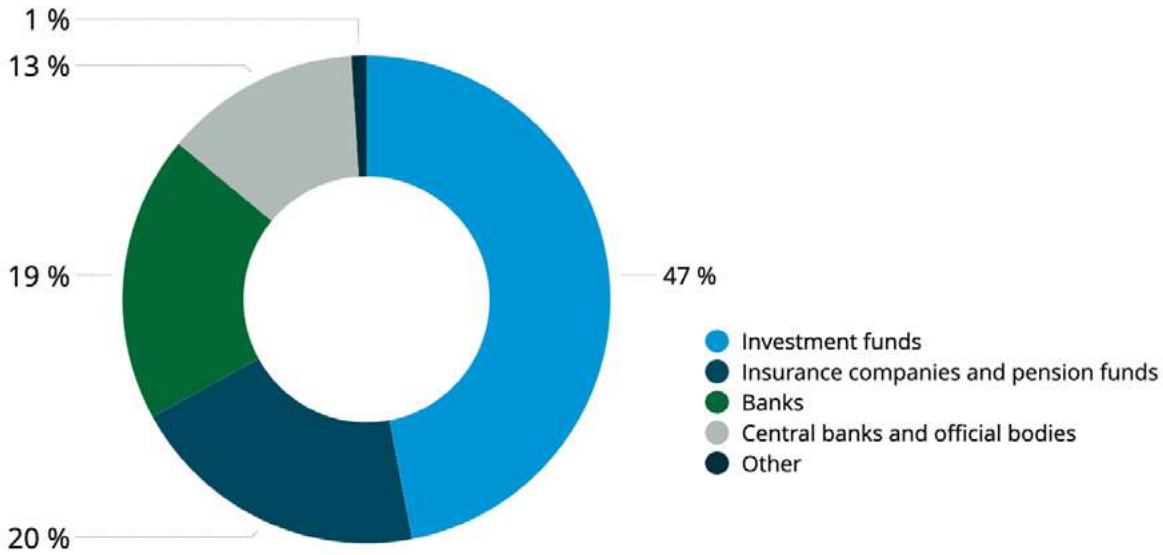
- **Annual update of the proceeds allocated during the period to Eligible Green Projects.**
- **Indicators of foreseen impact.**
- **Annual report of auditors or a third party which verifies the internal method of traceability and the placement of funds in Eligible Green Projects.**

2020 ISSUANCE

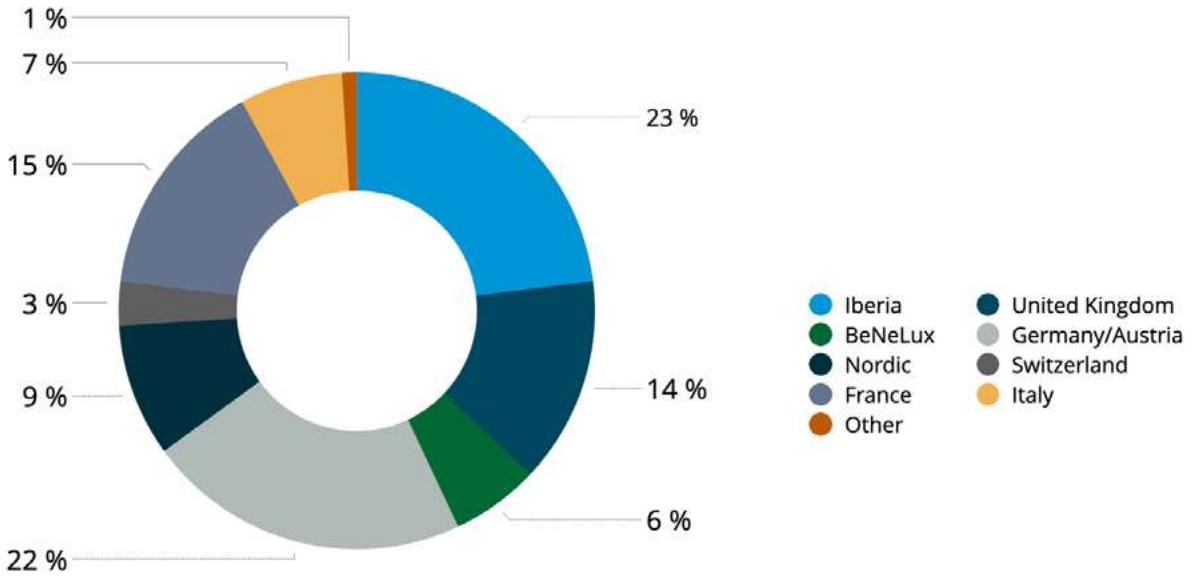
FOURTH GREEN BOND ISSUE

Issuer	Adif Alta Velocidad
Amount	600,000,000 EUR
Ratings (Moody's/Fitch)	Baa2/A-
Pricing Date	29 January 2020
Settlement date	12 February 2020
Maturity	30 April 2030
Ranking	Senior Unsecured
Format	Fixed Type
Coupon	0.55% annual, ACT/ACT
Benchmark	SPGB 1.50% 04/30
Reoffer Spread	+23 b.p
Reoffer yield	0.575%
Reoffer price	99.753%
Net amount	597,558,000 EUR
Documentation	AIAF / English Law
Use of proceeds	Finance and/or refinance Eligible Green Projects

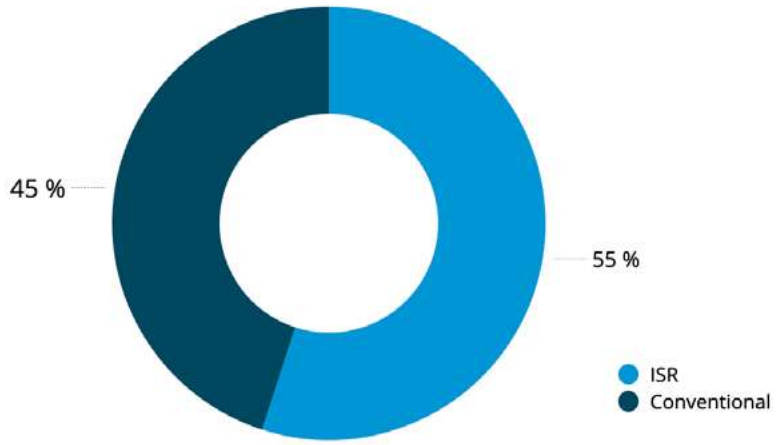
CATEGORY OF INVESTOR



GEOGRAPHIC DISTRIBUTION



SOCIALLY RESPONSIBLE INVESTORS VS CONVENTIONAL INVESTORS

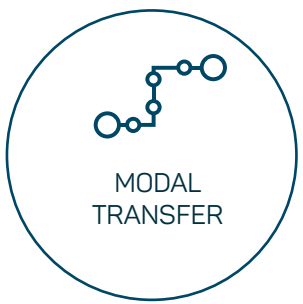


We present below the report corresponding to the issue performed in 2020.

Category 1 Projects

Investments related to new high-speed rail lines and rail lines extensions

INDICATORS OF FORESEEN IMPACT
BROKEN DOWN BY LINES



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 thousands of euros.

B. Time Saving, expressed in thousands of hours.

C. Modal Transfer, expressed in thousands of travelers km transferred from the different modes of transport to the high-speed railway mode.

D. CO_2 Tons Savings.

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

- Madrid – Levante High Speed Line.
- Antequera – Granada High Speed Line.
- Valladolid-Burgos-Vitoria High Speed Line.
- Madrid – Extremadura High Speed Line.
- Madrid – Galicia High Speed Line: Olmedo-Zamora-Ourense Section.
- Atlantic Axis High Speed Line: Santiago de Compostela-Vigo Section.
- Atocha – Chamartín UIC Connection and Atocha-Torrejón de Velasco Quadruplication.

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:

Travelers km transferred (thousands)	From private vehicle From bus From conventional train From airplane
Travelers km HSL (thousands)	Captured Induced
Hours saved (thousands) Time savings (thousands of hours)	Obliged Not obliged
Tons km (thousands)	Transferred from truck (ton*km in truck) Captured (ton km railways)

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

DEFINITION OF THE INDICATORS

SAVING OF EXTERNAL COSTS

The indicator "Saving of external costs" shows the socio-economic 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 project.

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).

DEFINITION OF THE INDICATORS

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

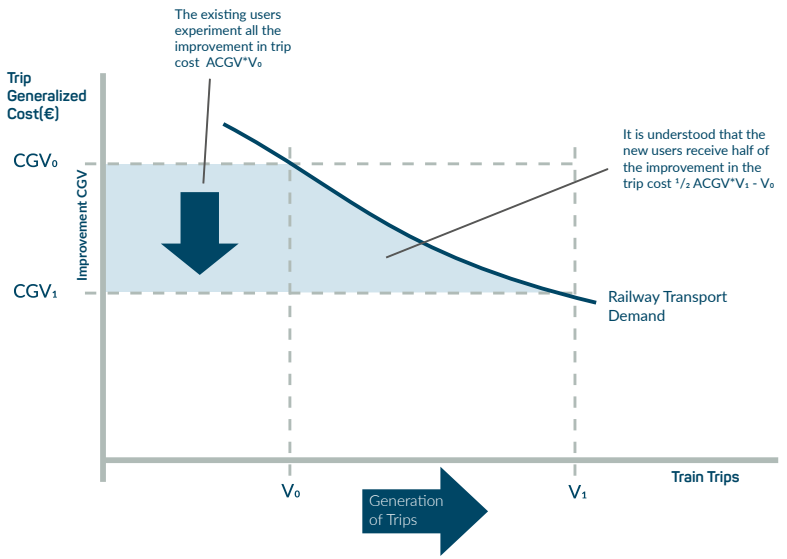
B. NET SURPLUS OF THE CONSUMER OF NEW TRAVELERS

GENERATED/INDUCED TRAFFIC

As it has been 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 THE INDICATORS

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

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 traveler 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 THE INDICATORS

SAVINGS OF EXTERNAL COSTS

TIME SAVINGS

MODAL TRANSFER

SAVING OF TONS OF CO_2

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.

In the following tables appears the value of the study:

DEFINITION OF THE INDICATORS

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

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

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
Environment damages	--	--	--	--
Congestion	490.25	4.81	0.00	0.00
TOTAL	**942.44**	**33.35**	**5.15**	**23.85**

(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
Environment damages	--	--	--	--	--	--	--
Congestion	51.29	6.33	0.00	0.00	0.00	0.00	0.00
TOTAL	**124.65**	**26.57**	**224.74**	**3.77**	**13.94**	**15.57**	**33.53**

DEFINITION OF THE INDICATORS

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

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 high-speed line), 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 THE INDICATORS

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | **MODAL TRANSFER** | SAVING OF TONS OF CO_2

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 thousands) 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.

DEFINITION OF THE INDICATORS

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

	PASSENGER TRANSPORT						FREIGHT TRANSPORT				
	ROAD				RAIL	AVIATION	ROAD			RAIL	WATERBORNE
UNIT	Passenger cars	Buses & coaches	Motorcycles	Total road passenger transport	Passenger transport	Passenger transport (incl. LTO)	LDV	HDV	Total road freght transport	Freight transport	Inland waterways
	g/vkm	g/vkm	g/vkm	g/vkm	g/train-km	g/vkm	g/vkm	g/vkm	g/vkm	g/train-km	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
TOTAL	**204**	**647**	**79**	**206**	**1,314**	**15,887**	**242**	**696**	**381**	**3,420**	**21,431**

CO2 (Exhaust) emission factors

Data source: TREMOVE (2010)

SAVING OF TONS OF CO_2

For the calculation of this indicator the factors of emission of CO_2 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_2 by vehicle km, have been calculated for each country, differencing by transport means, both for freight and for travelers.

In the table below the values of these factors of emission of CO_2 are stated, whereas the values corresponding to Spain have been highlighted.

DEFINITION OF THE INDICATORS

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

VALUES FOR SPAIN OF THE STUDY OF EXTERNAL COSTS

	CONVENTIONAL RAILWAY	BUS	CAR	AIRPLANE	A. RAILWAY
g CO2 / vehicle - km	1,018	607	191	20,654	1,018
Average occupation	180	39	1.8	150	260
g CO2 / traveler - km	5.7	15.6	106.1	137.7	3.9
kg CO2 / traveler - km	**0.0057**	**0.0156**	**0.1061**	**0.1377**	**0.0039**

	FREIGHT RAILWAY	FREIGHT TRUCK
g CO2 / vehicle - km	3,149	699
Average load	400	11,8
g CO2 / ton - km	7.9	59.2
kg CO2 / ton - km	**0.0079**	**0.0592**

From the emission factors corresponding to Spain in the previous table, measured in grams of CO2 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 CO2 for each project evaluated are obtained and shown in this table.

The total saving of emissions of CO_2 (in tons) is calculated as application of the ratios from the previous table to the travellers.km and tons.km, captured and induced by each high-speed project.

MADRID- LEVANTE HIGH SPEED LINE

MADRID - LEVANTE H.S.L.

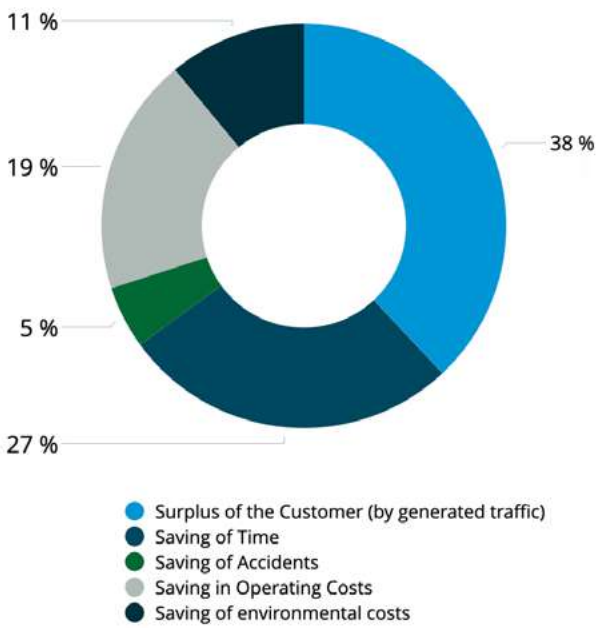
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

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 (2011).

The total savings (expressed in VAN to 2011 at 3% thousand Euros of 2011) of this line is the one following:

SAVINGS (Thousands of Euros of 2011)	**18,196,280**
Surplus of the Customer (by generated traffic)	6,855,188
Saving of Time	5,018,366
Saving of Accidents	969,097
Saving in Operating Costs	3,390,155
Saving of environmental costs	1,963,474



MADRID - LEVANTE H.S.L.

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

TIME SAVINGS

GLOBAL SUMMARY	TOTAL (30 YEARS)	AVERAGE ANNUAL SAVING
Thousands of hours saved	283,178	9,439

Total hours saved along the 30 years of the study.

MADRID - LEVANTE H.S.L.

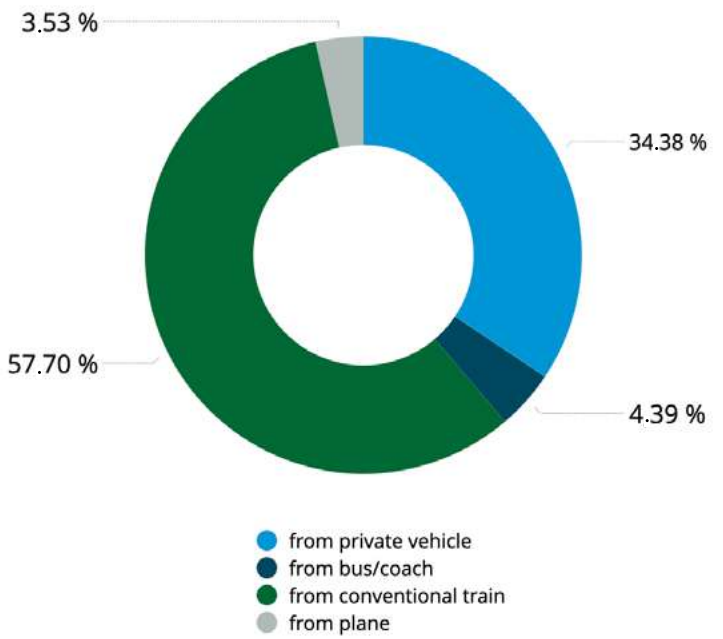
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | **MODAL TRANSFER** | SAVING OF TONS OF CO_2

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 (THOUSANDS)	**TOTAL (30 YEARS)**	**ANNUAL AVERAGE**
From private vehicle	32,838,353	1,094,612
From bus / coach	4,197,197	139,907
From conventional train	55,095,573	1,836,519
From airplane	3,375,938	112,531
TOTAL Thousands Travellers km transferred	**95,507,061**	**3,183,569**

On the other hand, it can be noted that from the total traveler's km in high speed, a 14.4% corresponds to the travelers induced. From the travelers transferred, the greater percentage comes from the conventional train itself with a 57.7%, followed by the private vehicle with a 34.4%.



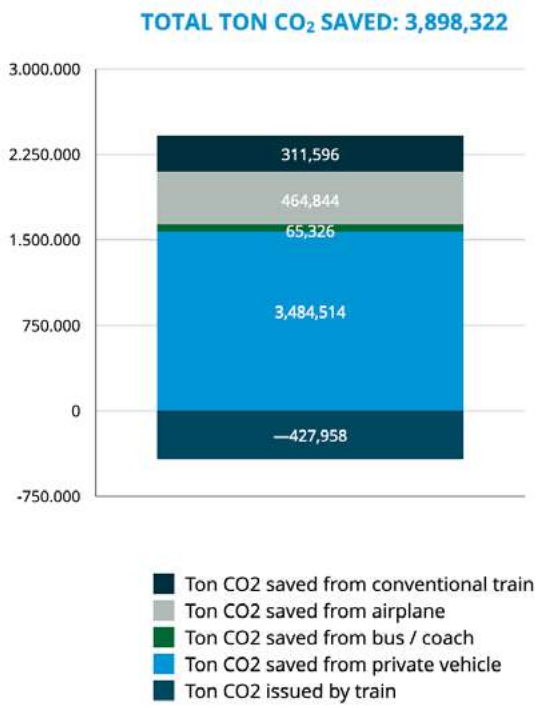
MADRID - LEVANTE H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

SAVING OF TONS OF CO_2

Savings of CO_2 by the travelers km transferred from each mean of transport for the total of the period of analysis (30 years) are the ones below:

MADRID-LEVANTE HSL	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO_2 saved from private vehicle	3,484,514	116,150
Ton CO_2 saved from bus / coach	65,326	2,178
Ton CO_2 saved from conventional train	311,596	10,387
Ton CO_2 saved from airplane	464,844	15,495
Ton CO_2 issued from train	-427,958	-14,265
TOTAL Tons CO_2 SAVED	**3,898,322**	**129,944**



ANTEQUERA - GRANADA HIGH SPEED LINE

ANTEQUERA - GRANADA H.S.L.

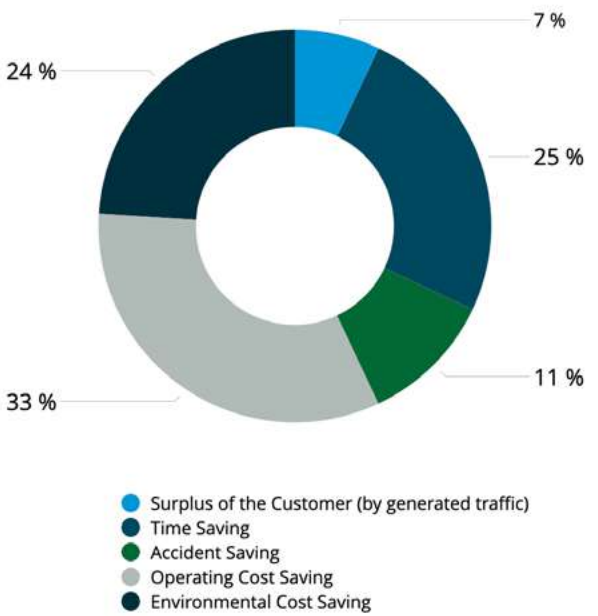
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

SAVINGS OF EXTERNAL COSTS

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

The total savings (expressed in VAN at 2015 at 3% thousand Euros of 2017) of this line is the one following:

SAVINGS (Thousands of Euros of 2017)	**2,783,655**
Surplus of the Costumer (by generated traffic)	205,709
Time Saving	683,677
Accident saving	320,859
Operating Cost Saving	909,627
Environmental Cost Saving	663,783



ANTEQUERA - GRANADA H.S.L.

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

TIME SAVINGS

GLOBAL SUMMARY	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Thousands saved hours	56,478	1,883

Total hours saved along the 30 years of the study.

ANTEQUERA - GRANADA H.S.L.

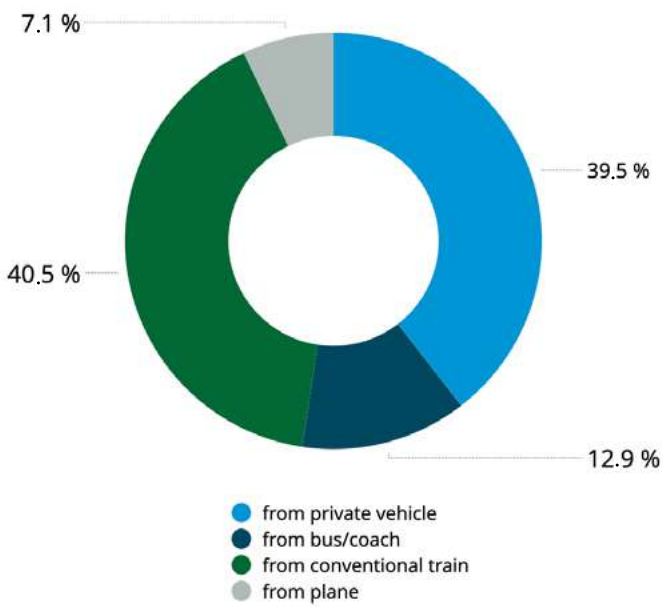
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | **MODAL TRANSFER** | SAVING OF TONS OF CO_2

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 (THOUSANDS)	**TOTAL** (30 YEARS)	**ANNUAL AVERAGE**
from private vehicle	10,554,836	351,828
from bus / coach	3,444,035	114,801
from conventional train	10,834,862	361,162
from airplane	1,894,223	63,141
TOTAL Thousands of Travellers.km transferred	**26,727,956**	**890,932**

On the other hand, it can be observed that from the total traveler's km in high speed, a 15.1% corresponds to the travelers induced. From the travelers transferred, the greater percentage comes from the conventional train itself with a 40.5%, followed by the private vehicle with a 39.5%.



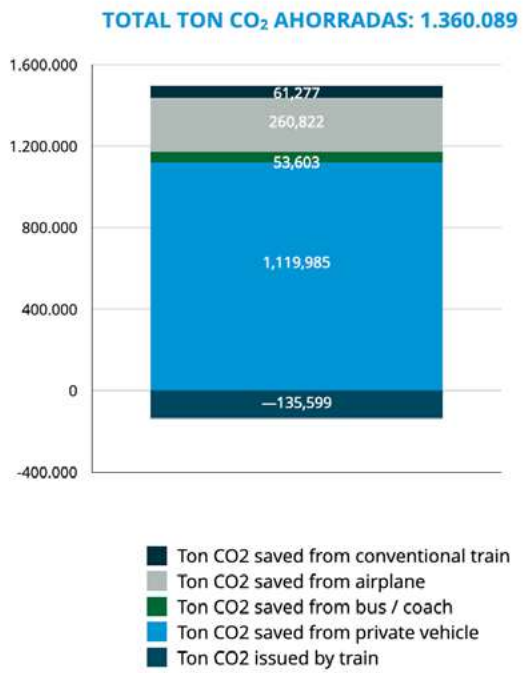
ANTEQUERA - GRANADA H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

SAVING OF TONS OF CO_2

The savings of CO2 by the travelers km transferred from each mean of transport for the total period of analysis (30 years) are the ones below:

ANTEQUERA - GRANADA HSL	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO_2 saved from private vehicle	1,119,985	37,333
Ton CO_2 saved from bus / coach	53,603	1,787
Ton CO_2 saved from conventional train	61,277	2,043
Ton CO_2 saved from airplane	260,822	8,694
Ton CO_2 issued by train	-135,599	-4,520
TOTAL Tons CO_2 SAVED	**1,360,089**	**45,336**



VALLADOLID-BURGOS-VITORIA HIGH SPEED LINE

VALLADOLID - BURGOS - VITORIA H.S.L.

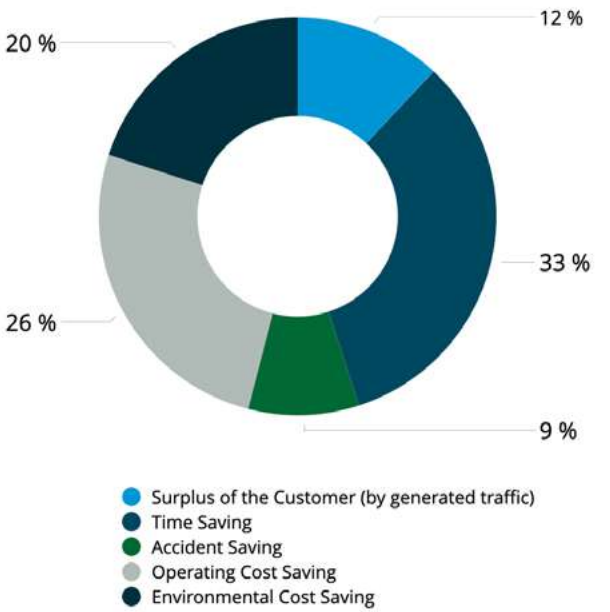
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

SAVINGS OF EXTERNAL COSTS

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

The total savings (expressed in VAN at 2019 at 3%, thousands of Euros of 2017) of this line is the one following:

SAVINGS (Thousands of Euros of 2017)	**5,778,232**
Surplus of the Customer (by generated traffic)	697,189
Time Saving	1,915,172
Accident saving	522,440
Operating Cost Saving	1,514,149
Environmental Cost Saving	1,129,281



VALLADOLID - BURGOS - VITORIA H.S.L.

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

TIME SAVINGS

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

Total hours saved along the 30 years of the study.

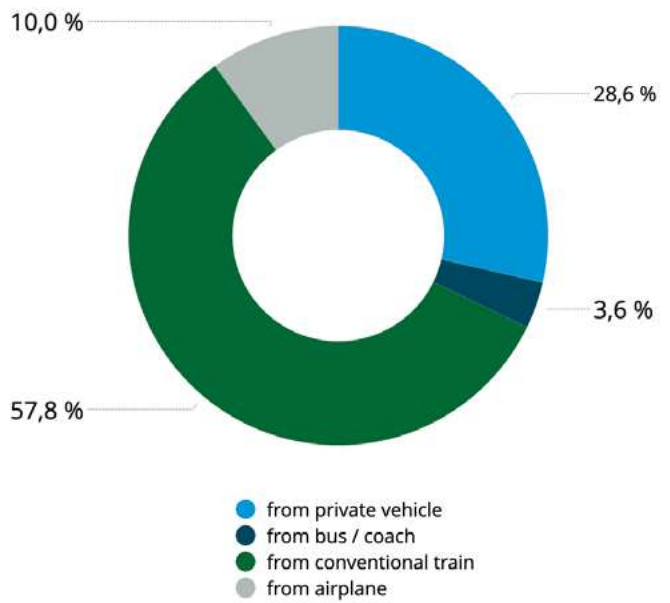
VALLADOLID - BURGOS - VITORIA H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | **MODAL TRANSFER** | SAVING OF TONS OF CO_2

MODAL TRANSFER

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

TRAVELERS KM TRANSFERRED (THOUSANDS)	**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
TOTAL Thousand Travellers km transferred	**60,397,188**	**2,013,240**



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

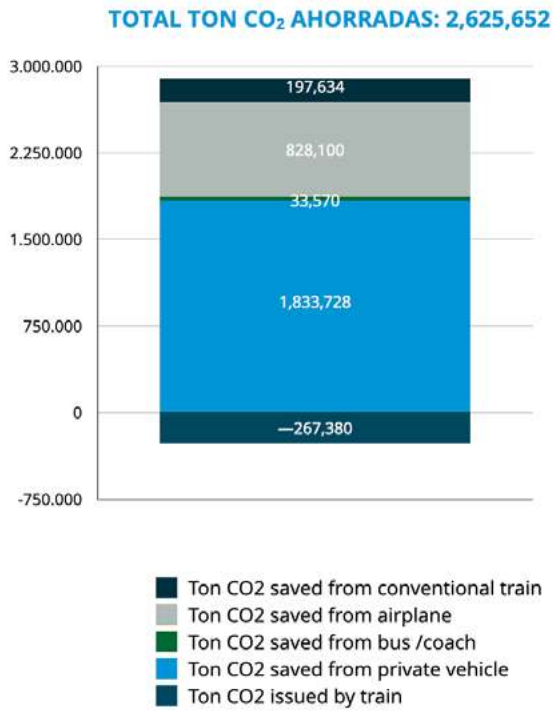
VALLADOLID - BURGOS - VITORIA H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

SAVING OF TONS OF CO_2

The savings of CO2 by the traveler's km of each mean of transport for the total of the analysis period (30 years) are the ones below:

VALLADOLID-BURGOS-VITORIA HSL	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO_2 saved from private vehicle	1,833,728	61,124
Ton CO_2 saved from bus / coach	33,570	1,119
Ton CO_2 saved from conventional train	197,634	6,588
Ton CO_2 saved from airplane	828,100	27,603
Ton CO_2 issued by train	-267,380	-8,913
TOTAL Tons CO_2 SAVED	**2,625,652**	**87,522**



MADRID- EXTREMADURA HIGH SPEED LINE

MADRID - EXTREMADURA H.S.L.

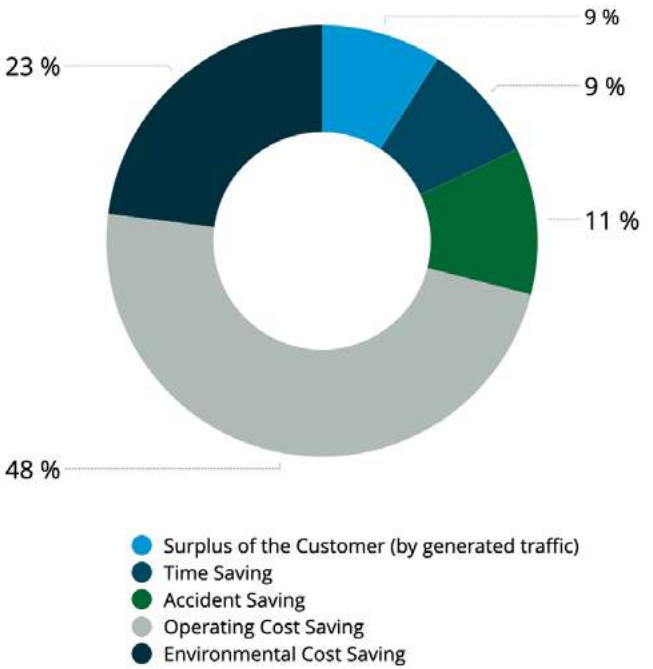
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

SAVING OF EXTERNAL COSTS

These results are calculated for a 30-year evaluation period since the implementation of the first phase of the project (2023).

The total of savings (expressed in VAN at 2023 at 3%, thousands of euros of 2017) of this line is the one following:

SAVINGS (Thousands of Euros of 2017)	4,190,579
TRAVELLERS	**3,389,031**
Surplus of the Consumer (by generated traffic)	375,627
Time Saving	380,762
Accident Saving	391,526
Operating Cost Saving	1,396,463
Environmental cost Saving	844,653
FREIGHT	**801,548**
Accident Saving	90,688
Operating Cost Saving	610,169
Environmental cost Saving	100,692



MADRID - EXTREMADURA H.S.L.

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

TIME SAVINGS

GLOBAL SUMMARY	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Thousands saved hours	28,886	963

Total hours saved along the 30 years of the study.

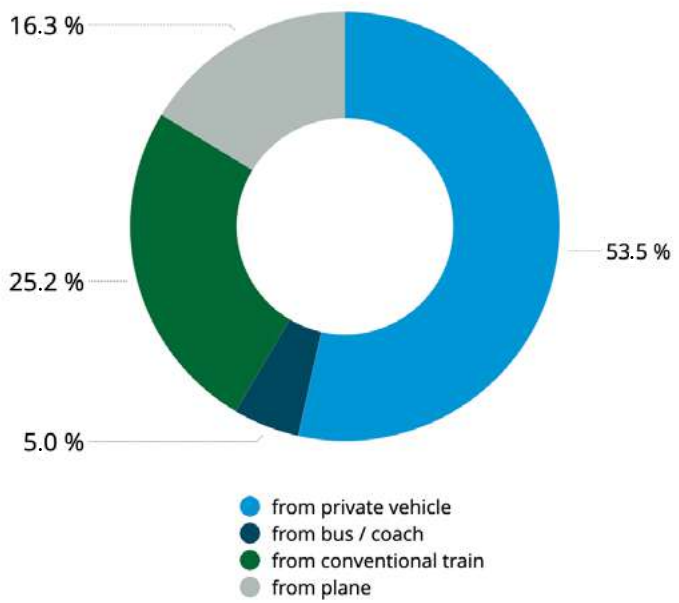
MADRID - EXTREMADURA H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | **MODAL TRANSFER** | SAVING OF TONS OF CO_2

MODAL TRANSFER

Below appear summarized the Travelers Km transferred from each transport mean and the graphic of percentages of modal transfer:

TRAVELERS KM TRANSFERRED (THOUSANDS)	**TOTAL** (30 YEARS)	**ANNUAL AVERAGE**
From private vehicle	14,806,050	493,535
From bus / coach	1,388,856	46,295
From conventional train	6,960,991	232,033
From airplane	4,497,809	149,927
TOTAL Thousands of Travellers km transferred	**27,653,706**	**921,790**



On the other hand, it can be noted that from the total traveler's km in high speed, 12.8% belongs to the travelers induced. From the travelers transferred, the great percentage comes from the private vehicle with a 53.5% followed by the conventional train with a 25.2%.

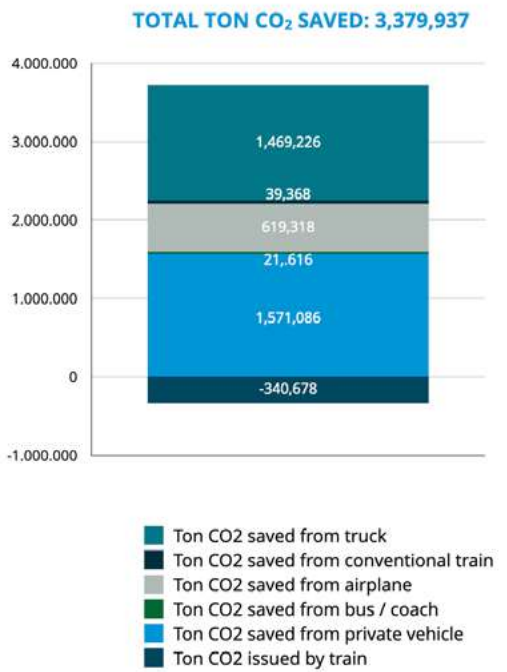
MADRID - EXTREMADURA H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

SAVING OF TONS OF CO_2

The savings of CO_2 due to the travelers km transferred of each mean of transport for the total analysis period (30 years) are the ones below:

MADRID – EXTREMADURA HSL	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO2 saved from private vehicle	1,571,086	52,370
Ton CO2 saved from bus / coach	21,616	721
Ton CO2 saved from conventional train	39,368	1,312
Ton CO2 saved from airplane	619,318	20,644
Ton CO2 saved from truck	1,469,226	48,974
Ton CO2 issued by train	-340,678	-11,356
TOTAL Tons CO2 SAVED	**3,379,937**	**112,665**



MADRID– GALICIA HIGH SPEED LINE

OLMEDO-ZAMORA-OURENSE SECTION

MADRID - GALICIA H.S.L.

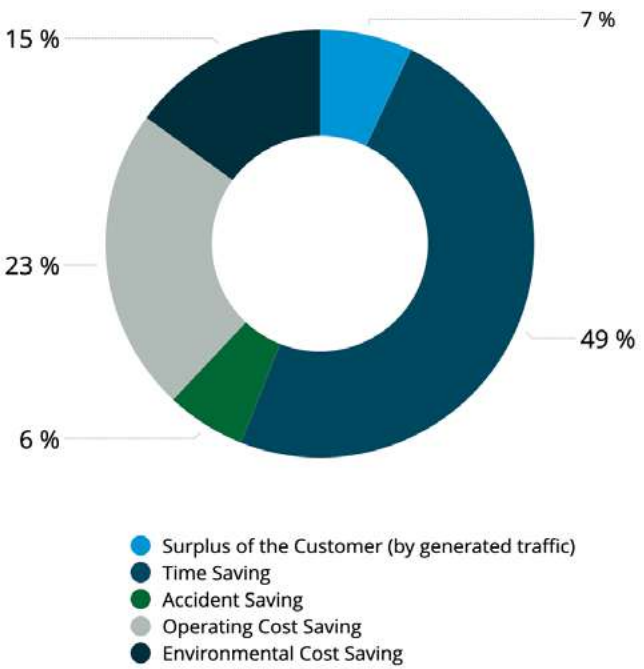
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

SAVINGS 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 (2016).

The total savings (expressed in VAN at 2016 at 3%, thousand euros of 2017) of this line is the one following:

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



MADRID - GALICIA H.S.L.

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

TIME SAVINGS

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

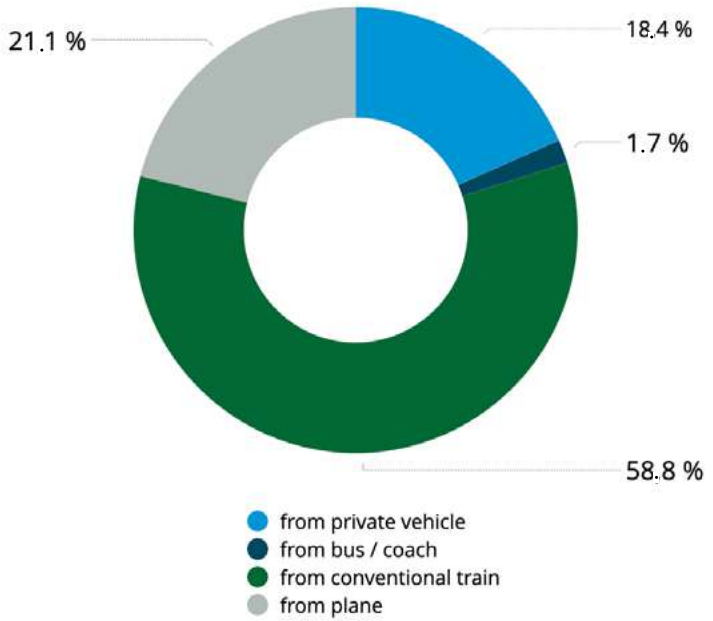
Total hours saved along the 30 years of the study.

MADRID - GALICIA H.S.L.

MODAL TRANSFER

Below appear summarized the Travelers km transferred of each transport mean and the graphic of percentages of modal transfer:

TRAVELERS KM TRANSFERRED (THOUSANDS)	**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
TOTAL Thousand of Travellers Km transferred	**38,418,279**	**1,280,609**



On the other hand, it can be highlighted 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 conventional train with a 58.8%, followed by the airplane with a 21.1%.

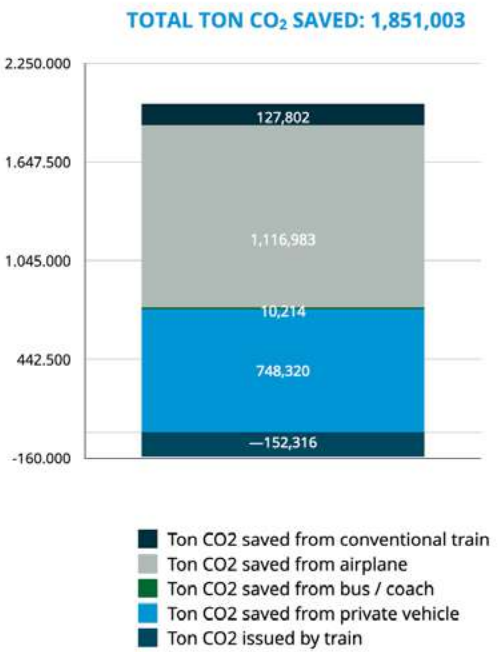
MADRID - GALICIA H.S.L.

SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | **SAVING OF TONS OF CO2**

SAVING OF TONS OF CO_2

The savings of CO2 by the travelers km transferred from each mean of transport for the total of the analysis period (30 years) are the ones below.

MADRID-GALICIA HSL	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO2 saved from private vehicle	748,320	24,944
Ton CO2 saved from bus / coach	10,214	340
Ton CO2 saved from conventional train	127,802	4,260
Ton CO2 saved from airplane	1,116,983	37,233
Ton CO2 saved from truck	-152,316	-5,077
Ton CO2 issued by train	**1,851,003**	**61,700**



ATLANTIC AXIS HIGH SPEED LINE

SANTIAGO DE COMPOSTELA - VIGO SECTION

ATLANTIC AXIS H.S.L / SANTIAGO-VIGO

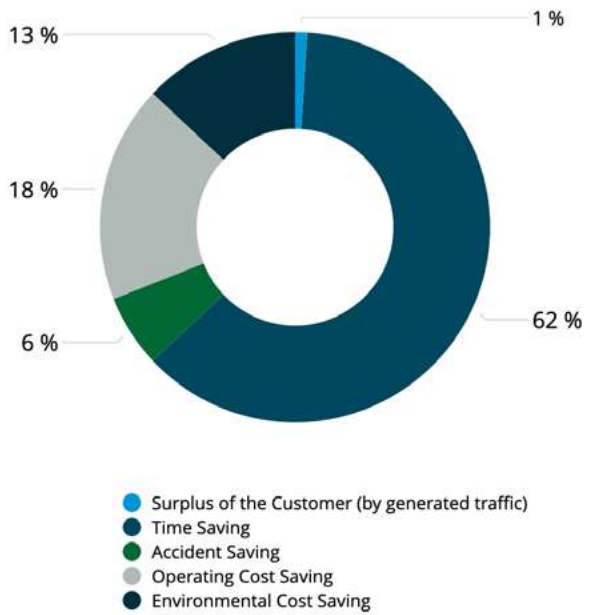
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

SAVINGS 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 (2016).

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

SAVINGS (Thousands of Euros of 2017)	**2,578,482**
Surplus of the Customer (by generated traffic)	23,650
Time Saving	1,592,161
Accident saving	169,618
Operating Cost Saving	461,022
Environmental Cost Saving	332,030



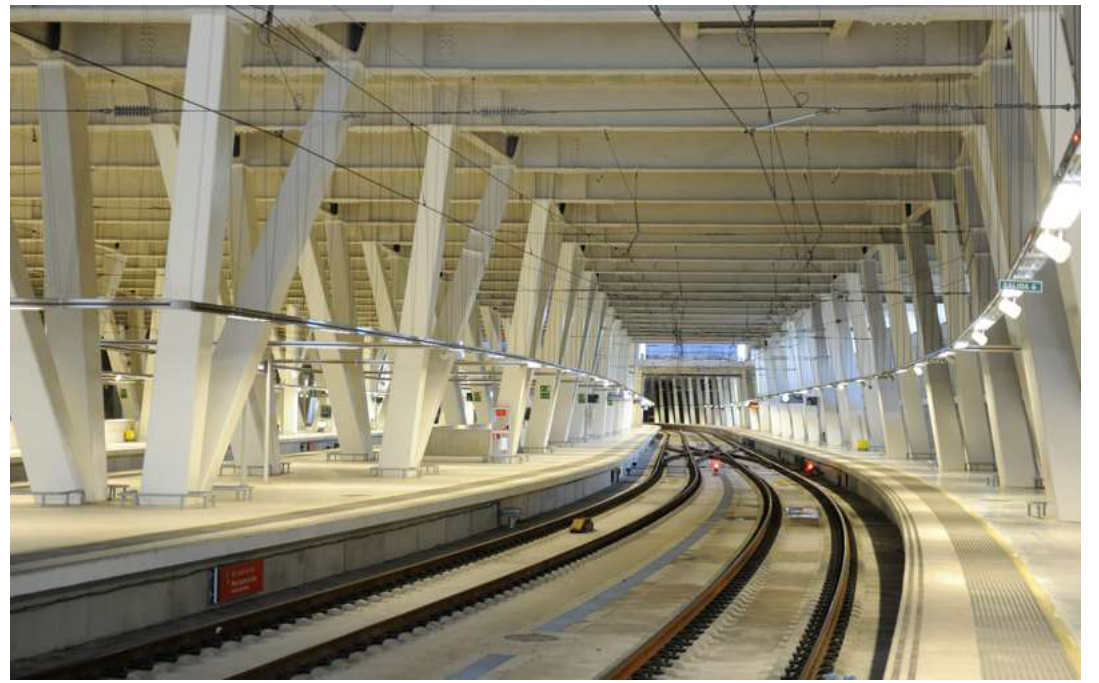
ATLANTIC AXIS H.S.L / SANTIAGO-VIGO

SAVINGS OF EXTERNAL COSTS | **TIME SAVINGS** | MODAL TRANSFER | SAVING OF TONS OF CO_2

TIME SAVINGS

GLOBAL SUMMARY	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Thousands of hours saved	84,509	2,817

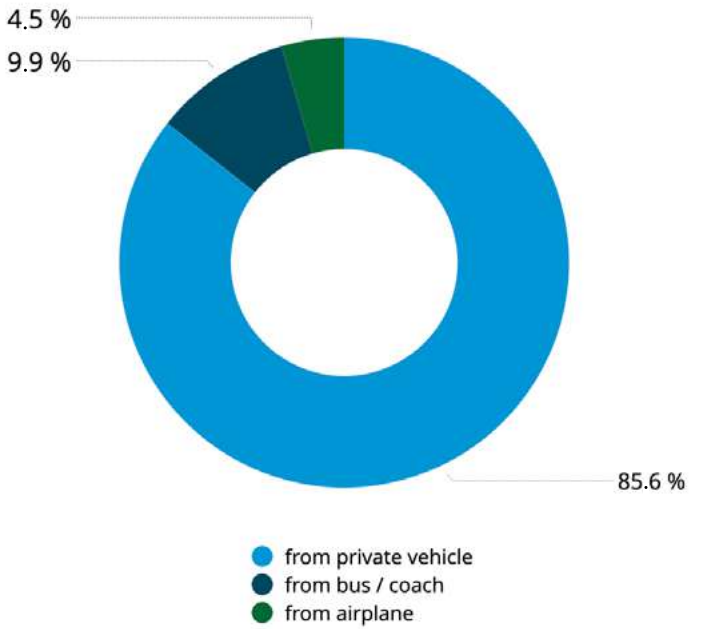
Total hours saved along the 30 years of the study.



MODAL TRANSFER

Below appears the summary of the Travelers km transferred from each transport mean and the graphic of percentages of modal transfer:

TRAVELERS KM TRANSFERRED (THOUSANDS)	**TOTAL** (30 YEARS)	**ANNUAL AVERAGE**
from the private vehicle	6,427,144	214,238
from the bus	741,883	24,729
from the airplane	339,677	11,323
TOTAL Thousands of Travellers.km transferred	**7,508,705**	**250,290**

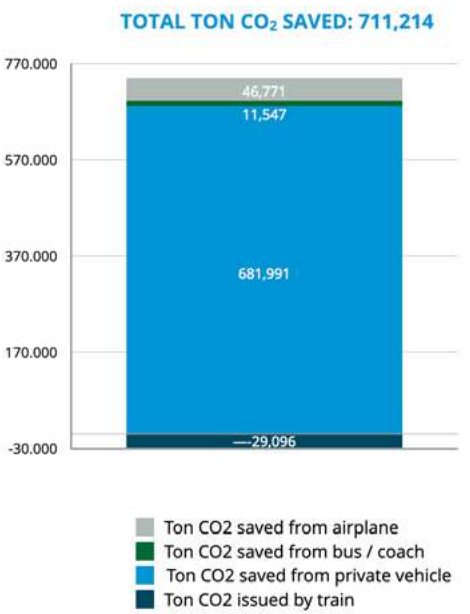


From the travelers transferred, the greater percentage comes from the private vehicle with an 85.6% and afterwards from the bus with a 9.9%.

SAVING OF TONS OF CO_2

The savings of CO2 by the traveler's km transferred from each mean of transport for the total of the analysis period (30 years) are the ones below.

LAV SANTIAGO – VIGO HSL	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO2 saved from private vehicle	681,991	22,733
Ton CO2 saved from bus / coach	11,547	385
Ton CO2 saved from airplane	46,771	1,559
Ton CO2 issued by train	-29,096	-970
TOTAL Tons CO2 SAVED	**711,214**	**23,707**



CHAMARTÍN- ATOCHA UIC CONNECTION
& ATOCHA- TORREJÓN DE VELASCO QUADRUPLICATION

CHAMARTÍN - ATOCHA
TORREJÓN DE VELASCO

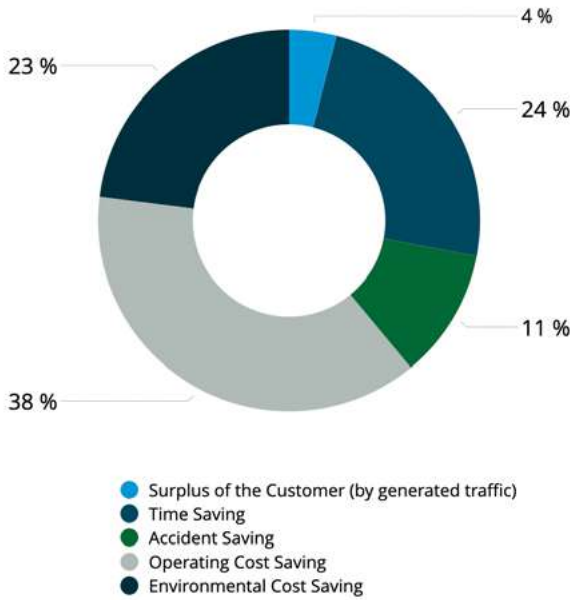
SAVINGS OF EXTERNAL COSTS | TIME SAVINGS | MODAL TRANSFER | SAVING OF TONS OF CO_2

SAVINGS 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 (2021).

The total of the savings (expressed in VAN at 2021 at 3%, thousands of euros of 2018) of this line is the one following:

SAVINGS (Thousands of Euros of 2018)	**15,138,957**
Surplus of the Consumer (by generated traffic)	503,824
Saving of Time	3.668,240
Saving of Accidents	1,713,326
Saving in Operating Costs	5,768,941
Environmental Costs Saving	3,484,627



TIME SAVING

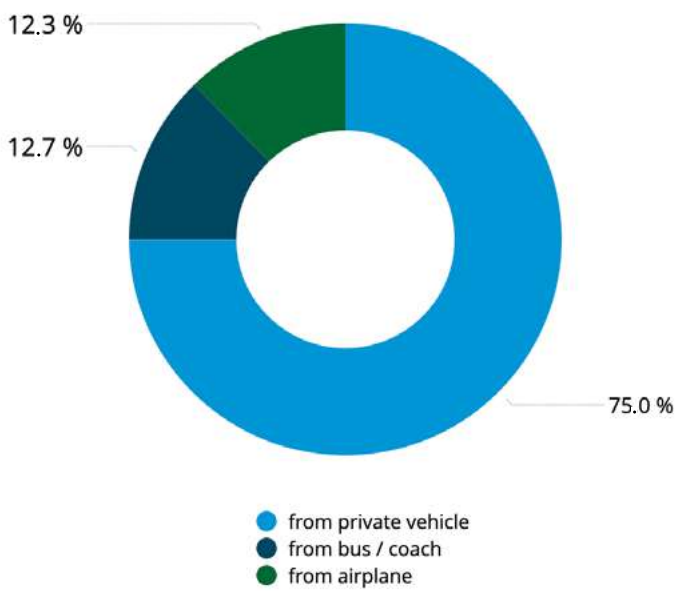
GLOBAL SUMMARY	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Thousands of hours saved	266,739	8,891

Total hours saved along the 30 years of the study.

MODAL TRANSFER

Below appears the summary of the Travelers km transferred from each transport mean and the graphic of percentages of modal transfer:

TRAVELERS KM TRANSFERRED (THOUSANDS)	**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
TOTAL Thousands of Travellers km transferred	**91,156,778**	**3,038,559**

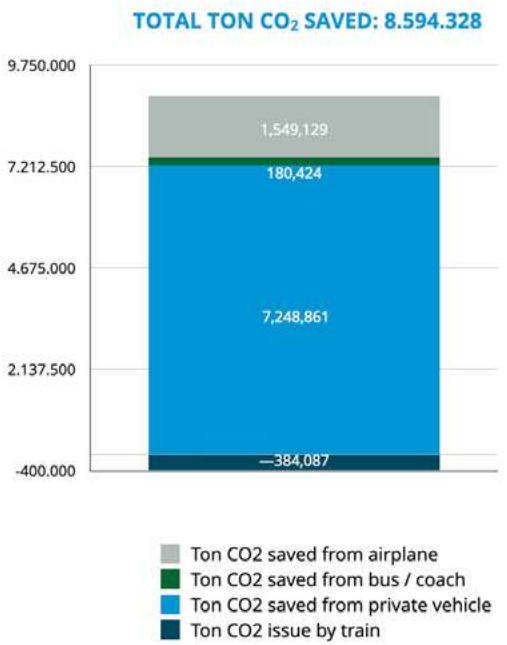


From the travelers transferred, the greater percentage comes from the private vehicle with an 74.9% and afterwards from the bus with a 12.7%.

SAVING OF TONS OF CO_2

The savings of CO2 by the travelers km transferred from each mean of transport for the total of the analysis period (30 years) are the ones below:

CHAMARTÍN-ATOCHA-TORREJÓN DE VELASCO UIC CONNECTION	TOTAL (30 YEARS)	ANNUAL AVERAGE SAVING
Ton CO2 saved from private vehicle	7,248,861	241,629
Ton CO2 saved from bus / coach	180,424	6,014
Ton CO2 saved from airplane	1,549,129	51,638
Ton CO2 issued by train	-384,087	-12,803
TOTAL Tons CO2 SAVED	**711,214**	**23,707**



ALLOCATION OF FUNDS TO
ELIGIBLE GREEN PROJECTS

As indicated at the beginning of this report, 95.12% 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 2019 and 2020, is the following:

HIGH SPEED LINES	EXECUTED AMOUNT ELIGIBLE ACCORDING TO FRAMEWORK (THOUSAND EUROS)	FUNDING WITH GREEN BOND 2020 (THOUSAND EUROS)	GREEN BOND ALLOCATION (%)
MADRID-LEVANTE H.S.L.	152,669.04	102,076.91	**17.08%**
ANTEQUERA-GRANADA H.S.L.	69,426.86	40,116.70	**6.71%**
VALLADOLID-BURGOS-VITORIA H.S.L.	34,842.95	15,208.47	**2.55%**
MADRID-EXTREMADURA H.S.L.	250,656.13	101,975.13	**17.07%**
MADRID-GALICIA H.S.L. (OLMEDO-LUBIAN-ORENSE)	652,365.78	287,874.01	**48.18%**
ATLANTIC AXIS (SANTIAGO - VIGO)	14,008.00	9,113.21	**1.53%**
CHAMARTÍN- ATOCHA- TORREJÓN CONNECTION	35,909.07	12,053.13	**2.02%**
TOTAL	**1,209,877.83**	**568,417.57**	**95.12%**

APLICACIÓN DE LOS FONDOS A

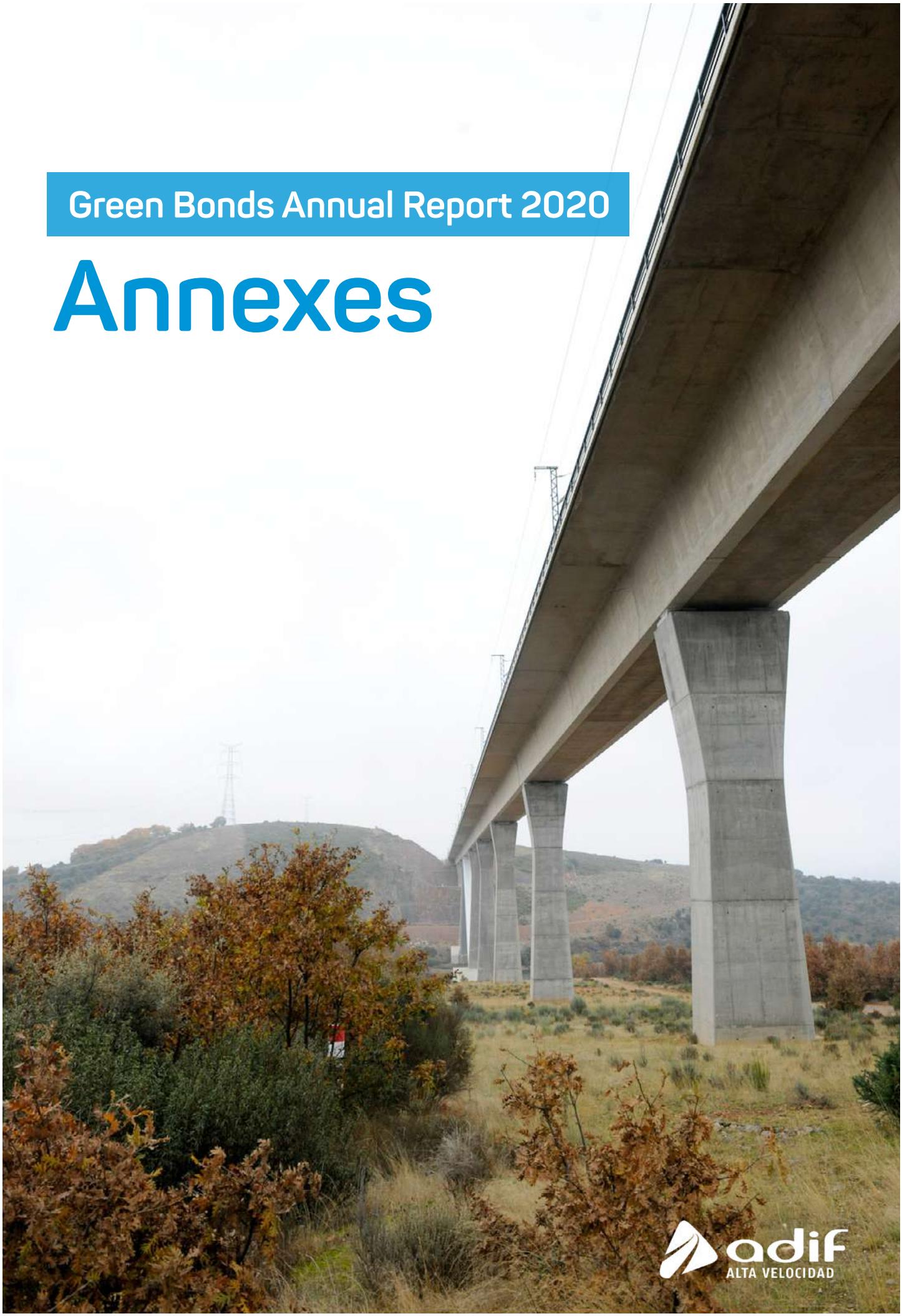
PROYECTOS VERDES ELEGIBLES

In summary, the detail of the total allocation of the funds corresponding to the Green Bond issuance in 2020 would remain as follows:

SUMMARY OF ALLOCATION OF FUNDS	FUNDING WITH GREEN BOND 2020 (THOUSAND EUROS)	GREEN BOND ALLOCATION (%)
Category 1: High Speed Lines	568,417.57	95.12%
TOTAL ALLOCATED	**568,417.57**	**95.12%**
Funds pending of allocation	29,140.43	4.88%
NET AMOUNT GREEN BOND 2020	**597,558.00**	**100.00%**

Green Bonds Annual Report 2020

Annexes



INDEPENDENT ASSURANCE REPORT ON THE GREEN BONDS ANNUAL REPORT 2020

To the President of ENTIDAD PÚBLICA EMPRESARIAL ADIF – ALTA VELOCIDAD.

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 Annual Green Bonds Report 2020 (hereinafter, Green Bonds 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 February 12, 2020, coincides with the net funds stated in the Green Bonds Report.
- That the typology of the projects in which the investments have been materialized, stated in the Green Bonds 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 2019 and 2020 for the eligible green projects, as stated in the Green Bond Report, is higher than the net amount received from the Green Bond issuance on 12 February 2020.

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 Annual 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 Management and the units of ADIF-AV which have participated in the preparation of ADIF-AV's Green Bond Annual Report various questions and we have applied certain procedures including, in general and amongst others, the following procedures:

- Obtaining and reading of the Green Bonds 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 by Green Bonds 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 February 12, 2020, by reviewing the corresponding bank statements.
- Confirm that the typology of the projects in which the investments stated in the Green Bonds Report has been materialized corresponds to one of the two categories of "eligible green projects" indicated in the Entity's Green Financing Framework.
- We have confirmed whether the investment made in the eligible green projects, stated in the Green Bonds Report, is greater than the net funds received from the Green Bonds issue made on February 12, 2020, by reviewing the main corresponding supporting documentation of the investment.
- Confirm, where applicable, that an amount equivalent to the net funds obtained from the issue of Green Bonds not applied to investment in "eligible green projects" is invested in a responsible manner, in bank deposits, cash or equivalents, as indicated in the Entity's Green Financing Framework. In this regard, our work has only consisted of confirming that the total balance of the bank statements, at the close of the financial year in which the issue was made and at the date of this report, is equal to or greater than the amount of funds obtained from the issue of Green Bonds not applied to the investment of "eligible green projects" indicated in the Green Bonds Report.
- Obtaining and reading of the "ADIF-Alta Velocidad Green Finance Second Opinion", issued by an independent expert.

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 February 12, 2020, coincides with the net funds stated in the Green Bonds Report.

2) The typology of the projects in which the investments has been materialized, stated in the Green Bonds 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 2019 and 2020 for the eligible green projects, as stated in the Green Bond Report, is higher than the net amount received from the Green Bond issuance on 12 February 2020.

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.

Alfredo Ciriaco

26 March 2021

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ALTA VELOCIDAD