Annual Report

2017

GREEN BONDS

adif
ALTA VELOCIDAD

LETTER FROM THE PRESIDENT

With the first issuing of green bonds in past June, ADIF Alta Velocidad wanted to reaffirm its commitment with sustainable development and the struggle against climate change.

Reducing the environmental impact through the use of railway infrastructure that are increasingly cutting-edge and efficient is the best way to actively contribute to reducing the polluting gases emissions and improving our passenger's lives, which, after all, are everyone's lives.

The train is one of the less polluting and safer means of transport, but it must be even less polluting and safer. A more "green" train will allow us to reduce the environmental impact of the infrastructures, protect the ecosystems they go through, reduce the noise pollution and improve the urban environment. And it is also a warranty for users. Getting in a railway that is more respectful to its environment, the passengers will know that they are reducing their carbon footprint.

Investing in sustainability is investing in the future. To do it, the Strategic Plan of ADIF Alta Velocidad is based on the Sustainable Development Goals (SDG) approved by the United Nations in 2015, with which we are completely committed.

We also followed the criterion guiding all the projects from ADIF Alta Velocidad, transparency, since according to the commitment taken last year we present the information about the use of funds and the obtained sustainability benefits.

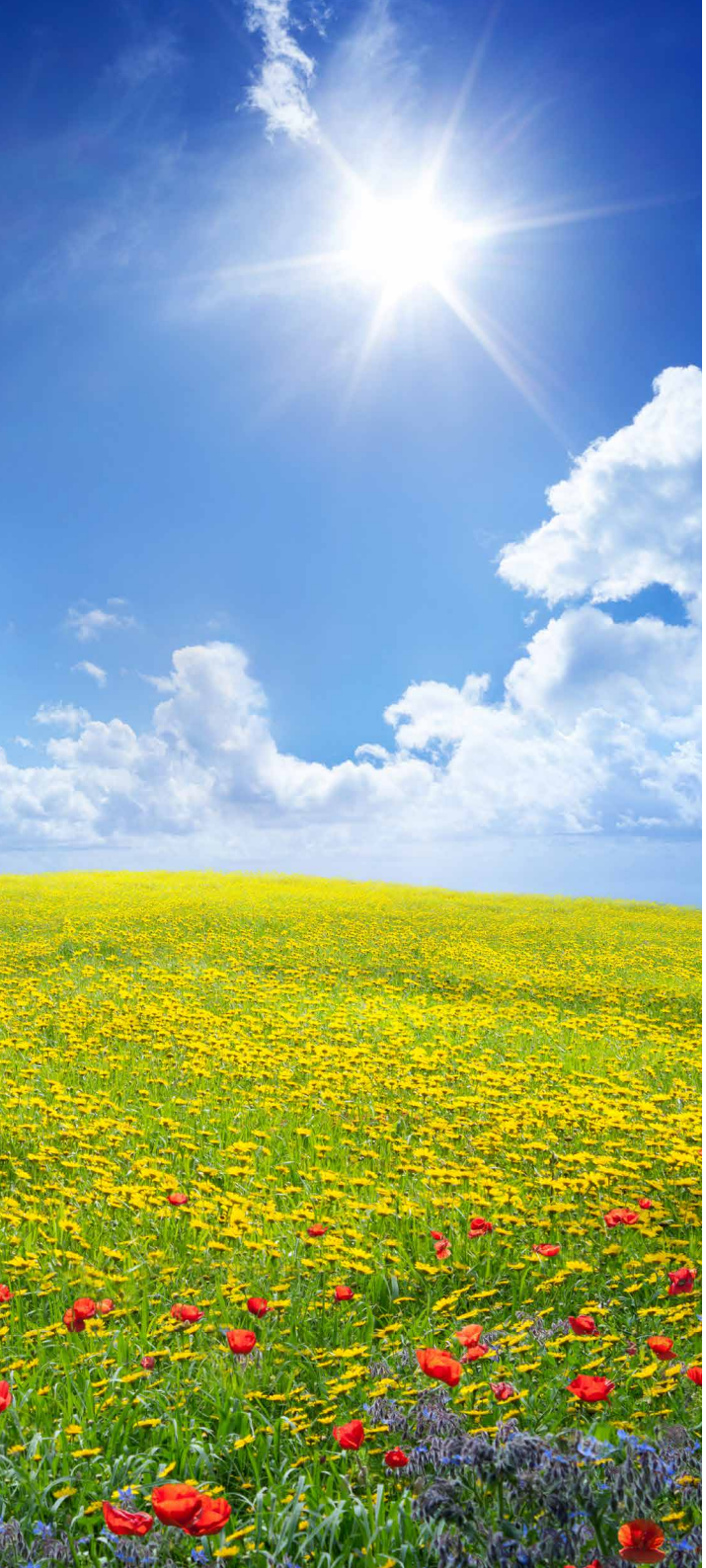
Our first experience endorses the seriousness of our bet: the independent assessment of our framework confirmed the compliance of the ICMA principles and it received the highest environmental rating ("dark green"). As a result, 45% of our issue had as recipients socially responsible investors. On their side, the funds obtained with the first issue of Green Bonds in June 2017, have already been invested in new high speed railway lines and in improving the current ones.

Once the six financed projects are under operation, we expect to save for the whole society over one billion per year in external costs, and among these we count avoided accidents; almost 30 million hours per year in time saved; 9.155 billions of passengers-km coming from other means of transport that are more contaminant than railway and over 550,000 tons of CO2 avoided per year.

The market of green bonds, although recent, has increased in 46% in year 2017 and it is expected to keep growing on short and medium term. From the total green issuances in Europe, last year Spain issued 5,655 millions of dollars, being the fourth most active European Union country in this market. In ADIF Alta Velocidad we want to be part of this trend and turn into a reference issuer in this market.

This report that is presented now incorporates the highest standards of the European Commission. It contains a first part with the summary of the fundamental issuing data and the aggregated savings for the six financed projects and, as well, for those investors who desire so, there is a second part with a detailed explanation of the methodology, the impact indicators used, and the disaggregated data for each of the financed projects.

For the future we want to do more, because climate change is an increasingly more tangible reality and we can only fight it if we are more ambitious. And this must be a collective effort. In ADIF Alta Velocidad we understand that only if we all participate will we be able to advance and take better projects forward to ensure a sustainable future.



INTRODUCTION

ADIF-Alta Velocidad is a state-owned public corporate entity ("entidad pública empresarial") with legal personality, autonomous management and resources, which operates under the supervision of the Ministry of Development, responsible for the construction and management of the High-speed rail network of Spain.

As a public service company, we understand that our responsibility to society is to guide our strategy to improve people's lives, and that means facing different challenges that affects us all, both globally and locally. From a global perspective, these challenges are summarized in the sustainable development goals (SDGs) formulated by the United Nations in 2015, especially those that are most relevant for our organization, considering the contribution we can make to them according to our nature and activity.

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

From this perspective, ADIF-Alta Velocidad has drawn up a Strategic Plan for the coming years, which has as a high-level reference the United Nation's SDGs. This Plan, called PLAN TRANSFORMA 2020, is based on three pillars: security, service and sustainability; likewise, it has three levers to accelerate the transformation process: people, digitalization and innovation. These pillars and levers are deployed in 15 strategic objectives around which the entire organization is aligned.

In this strategic framework, ADIF-Alta Velocidad maintains a strong commitment to sustainability, since it's entire strategy is aligned with the Sustainable Development Goals of the United Nations, in addition to providing within the Plan, specific strategic objectives that seek to improve our impact on society from an economic, social, environmental and good governance point of view of the organization. So, for example, Objective 3.2. of the Strategic Plan of Adif- Alta Velocidad is "to contribute to a respectful transport in regards to the environment and responsibility in the use of resources". To achieve this, initiatives have been designed to fight against climate change, incorporate circular economy projects, apply ecological purchasing criteria and strengthen the environmental monitoring system.

More specifically, in terms of our contribution to the SDGs, the construction and maintenance of high-speed lines, including those that have been allocated the resources obtained with the issuance of green bonds, have a positive impact on the following objectives and goals of the Sustainable Development of the UN 2030 Agenda:

"Resilient infrastructures, inclusive and sustainable industrialization, innovation"

Goal 9.1: "Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all". The high-speed railway lines are built with the highest quality standards to guarantee their resilience and reliability; Likewise, strict sustainability criteria and respect for the environment are applied for its construction and maintenance, establishing environmental monitoring measures that guarantee the preservation of the natural, cultural and archaeological heritage.

"Sustainable cities and communities"

Goal 11a: "Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning". The high-speed rail lines substantially improve, in a planned manner, the connection between urban, peri-urban and rural areas, facilitating the generation of economic and social ties, thereby generating opportunities for growth and well-being.

"Combat climate change and its impacts"

Goal 13a: "Integrate climate change measures into national policies, strategies and planning". The development of the high-speed network will cause significant amounts of traffic from road transport and air transport to be transferred to the railroad, this being the mode of transport that generates less CO_2 emissions and other greenhouse gases, thus fighting climate change through a better contribution of the transport sector to the fight against this phenomenon.

FRAMEWORK:

ADIF-Alta Velocidad established, in June 2017, a framework aligned with the Green Bonds Principles (GBP) of ICMA, with the objective of guaranteeing the transparency, disclosure and integrity of its Green Bond issues. The aforementioned "framework" is available on the ADIF-Alta Velocidad website.

ADIF-Alta Velocidad has fulfilled the commitments established in this "framework".

The Second Opinion issued by CICERO, classified as "DARK GREEN", confirms compliance with the ICMA Principles within the framework of ADIF-Alta Velocidad green bonds. This Opinion is 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 proceeds
- Reporting

USE OF PROCEEDS AND ELIGIBLE GREEN PROJECTS:

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

a. Investments related to new high-speed rail lines and extensions of existing high-speed lines.

b. Investments related to maintenance, upgrades and energy efficiency of high-speed rail lines.

SELECTION PROCESS:

100% of the funds obtained from the issue made on June 28, 2017, were assigned to category a) of the Eligible Green Projects mentioned in the previous section.

In category b), of the Eligible Green Projects mentioned in the previous section, no funds have been allocated from the issue made on June 28, 2017.

Specifically, the funds have been allocated to the following projects:

- **Madrid-Levante High Speed Line.**

  Currently the high-speed line from Valencia and Alicante is in operation. Fundamentally, work continues on the sections Monforte del Cid-Murcia and La Encina-Xátiva-Valencia.

  In the case of the Monforte del Cid-Murcia section, the different actions are being finalized, both in platform and track works, electrification and signalling. The execution of these works will allow high-speed passenger traffic to Murcia.

  Work in progress on the La Encina-Xátiva-Valencia section will allow high-speed passenger traffic, maintaining a conventional network line through which merchandise traffic will flow and that of medium-distance and nearby commuters.

- **Antequera-Granada High Speed Line**

  This action is not currently in service, although its completion is near.

  The works that are being carried out at present correspond to the completion of the actions on the line, both in platform works and track, electrification and signalling. The achievement of these works will allow high-speed passenger traffic from the Córdoba-Málaga line, in service, to Granada.

- **Valladolid-Burgos-Vitoria High Speed Line**

  The section between Valladolid and Venta de Baños is in service, under construction between Venta de Baños and Burgos and without works having started between Burgos and Vitoria.

  In this way, between Valladolid and Venta de Baños, investments are focused on communications and signalling actions, in order to update existing signage.

  Between Venta de Baños and Burgos the investment is focused on platform actions, in order to continue with road, electrification and signalling actions. The completion of this section will involve the high-speed Burgos connection for travellers.

- **Madrid-Extremadura High Speed Line**

  The sections Navalmoral-Plasencia (platform works) and the Plasencia-Cáceres-Mérida-Badajoz section are under construction.

  The investment made corresponds to the completion of the first phase of this section, with which the non-electrified line between Plasencia and Badajoz will be put into service. In this way, most of the investment is focused on platform and track actions. Subsequently, the electrification of the line will occur.

  This line has been designed so that the traffic circulating through it is suitable for passengers and merchandise.

- **Madrid-Galicia High Speed Line: Olmedo-Lubián-Ourense-Santiago section**

  The stretch between Olmedo and Zamora is in service, and the Zamora-Lubián and Lubián-Ourense sections are under construction.

  The commissioning is planned for sections, with the following one corresponding to Zamora-Puebla de Sanabria, leaving the Lubián-Ourense section for a later phase. In this way, the works are currently focused on platform, track and electrification on the Zamora-Lubián section, and on platform works on the Lubián-Ourense section. The line has been designed for passenger traffic.

- **High Speed Atlantic Axis: Santiago de Compostela-Vigo section**

  This action is in service.

  The investment made corresponds basically to platform works and to the updating of the signalling system. The line is suitable for passenger and merchandise traffic.

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

SAVINGS							
	EXTERNAL COSTS	TIME		MODAL TRANSFER		CO_2 TONS	
	(Thousands of Euros)	(Thousands of Hours)		(Thousands of KM Travelers Transferred)		(Tons)	
	30 years	30 years	Annual Average	30 years	Annual Average	30 years	Annual Average
LAV Madrid - Levante	16,247,439	283,178	9,439	95,507,061	3,183,569	3,898,322	129,944
LAV Antequera - Granada	2,283,881	56,478	1,883	26,727,956	890,932	1,360,089	45,336
LAV Valladolid - Burgos - Vitoria	4,733,151	114,677	3,823	60,397,188	2,013,240	2,625,652	87,522
LAV Madrid Extremadura	4,832,143	123,826	4,128	46,031,797	1,534,393	4,270,103	142,337
LAV Madrid-Galicia Olmedo-Zamora-Ourense-Santiago de Compostela Stretch	5,580,692	202,905	6,763	38,502,437	1,283,415	3,839,225	127,974
LAV Madrid-Galicia Santiago de Compostela-Vigo Stretch	2,265,564	84,509	2,817	7,508,705	250,290	711,214	23,707
TOTAL	**35,942,870**	**865,573**	**28,853**	**274,675,144**	**9,155,839**	**16,704,605**	**556,820**

MANAGEMENT OF PROCEEDS:

Until the total allocation of the net amount of the issue made on June 28, 2017, to Eligible Green Projects, ADIF-Alta Velocidad has temporarily invested the unallocated funds in remunerated current accounts.

The audit firm Grant Thornton, designated by ADIF-Alta Velocidad has verified the method of internal follow-up and allocation of funds to the Eligible Green Projects. The auditor's report is attached to this document.

REPORTING:

Until the expiration date of the Green Bonds issued, ADIF-Alta Velocidad will publish the following information annually on its website (http://www.adifaltavelocidad.es):

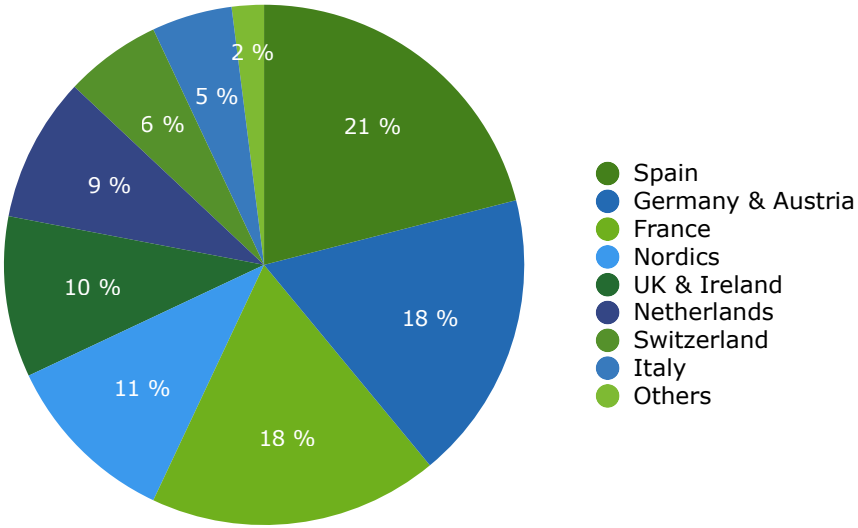
- Annual update of the funds destined to the Eligible Green Projects.
- Expected impact metrics.
- Annual report from auditors or a third party that verifies the internal tracking method and the allocation of the funds to the Eligible Green Projects.

INAUGURAL ISSUE:

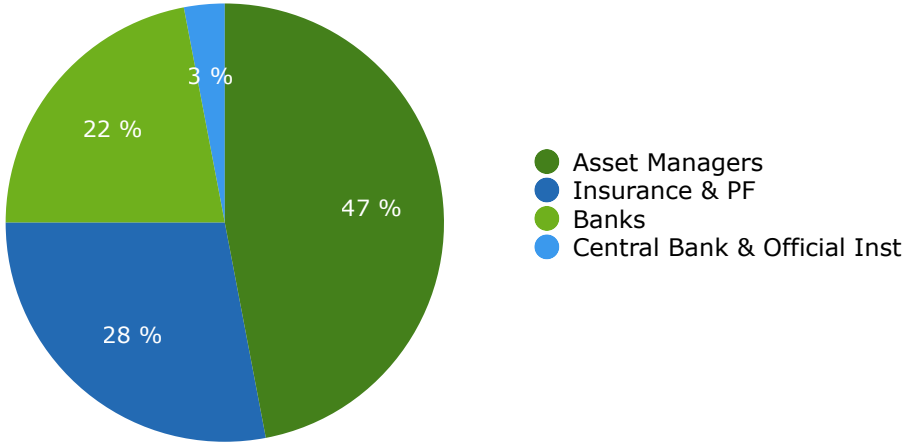
The inaugural issue of ADIF-Alta Velocidad Green Bonds was made on June 28, 2017 for an amount of 600 million euros.

Issuer:	ADIF-Alta Velocidad
Volumen:	600,000,000 EUR
Ratings (Moody's/Fitch):	Baa3/BBB+
Pricing date:	28 June 2017
Disbursement date:	5 July 2017
Maturity:	5 July 2023
Ranking:	Senior Unsecured
Format:	Fixed
Coupon:	0.80% anual, ACT/ACT
Benchmark:	Interpolated 6Y SPGB (SPGB 01/23 and SPGB 10/23) at 0.514%
Reoffer Spread:	+33 p.b.
Final profitability:	0.844%
Final price:	99,744%
Net amount:	597,864,000 EUR
Listing:	AIAF / Ley inglesa
Funds use:	Finance and/or refinance Green Eligible Projects

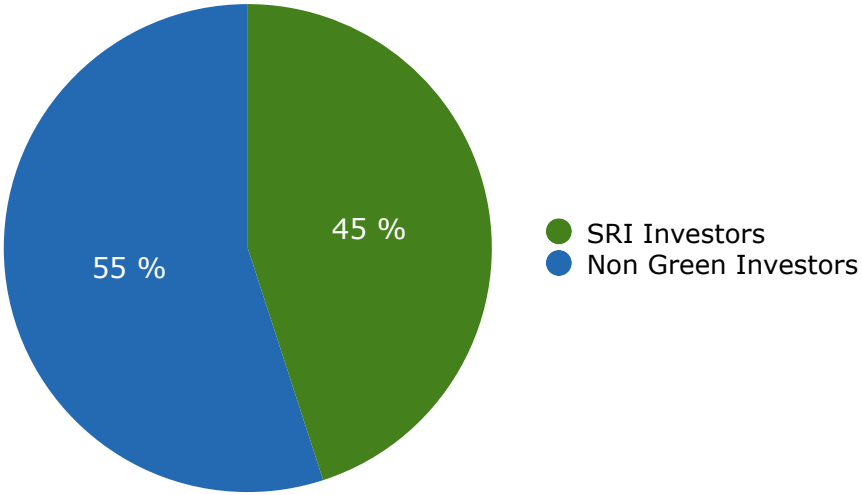
GEOGRAPHICAL DISTRIBUTION



INVESTOR CATEGORY



SRI INVESTORS VS. CONVENTIONAL INVESTORS



We present below the report corresponding to this issue.

EXPECTED IMPACT METRICS

BROKENDOWN BY LINES

INDEX

March 2018

1. INTRODUCTION

This document presents the socioeconomic savings indicators established in the high-speed projects that are part of the issuance of green bonds by ADIF Alta Velocidad.

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

a. External Costs Saving, expressed in thousands of euros.

b. Time Savings, expressed in thousands of hours.

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

d. CO_2 Tons Savings

The high-speed lines analysed 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-Santiago de Compostela stretch.
- Atlantic Axis High Speed Line: Santiago de Compostela-Vigo Stretch.

2. PREVIOUS CONSIDERATIONS

The calculation of the socio-economic savings indicators of each high-speed railway project is based on the profitability or cost-benefit analysis studies carried out by ADIF Alta Velocidad in each of the routes analysed, which follow the methodology and criteria established by the European Commission for 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 cost-benefit analyzes are based, in turn, on previous studies that provide the necessary data for calculations of socioeconomic profitability, which without being exhaustive are the following:

- Demand (from travellers and in the case of high-speed routes of mixed traffic, also merchandise) both for the situation without the project and for the situation with the project, both being necessary for the differential calculation of savings.
- Modal division within the transport system.
- Transfer of passengers/goods to the railway mode in the project situation (in this case the new high-speed line), for each of the existing modes in the project scope.
- Generated/induced traffic flows: additional traffic resulting from the improvement of transport after commissioning the analysed project, in this case, the high-speed railway line.
- Travel times in each mode of transport by Origin-Destination relationship, as well as the time savings produced by the modal shift.

The demand variables required for the calculation of the indicators that are the subject of this report are the following:

Travelers km transferred (thousands)	Private vehicle Bus Train Airplane
AV Travelers km (thousands)	Captured Induced
Hours Saved (thousands)	Time savings (thousands of hours) Obliged Time savings (thousands of hours) Not Obliged
Tons Km (thousands)	Transferred from truck (ton*km in truck) Captured (ton km railways)

The cost-benefit analysis uses a period of 30 years since the commissioning of the high-speed line, a period coinciding with that indicated in the document "Guide to Cost-benefit Analysis of Investments Projects. Economic appraisal tool for Cohesion Policy 2014-2020 " for railway projects.

Table 2.1. 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 infraestructure	10-15
Other sectors	10-15

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

3. DEFINITION OF INDICATORS

3.1. EXTERNAL COSTS SAVING

The indicator "External costs saving" is a reflection of the monetized socioeconomic benefits that are calculated in each profitability study, derived from the improvement of transport conditions by the project and the savings experienced by users.

In this indicator of external cost savings, the following concepts are grouped into a single value:

A Time savings

The time savings are calculated for the captured passengers (Origin/Destination (O/D) travellers flow) by the new rail services, as difference between the time in situation without the project (or reference) for a displacement in the mode used in this scenario, and the time in rail used in the scenario with the project.

As a result, the time savings are differentiated depending on the O/D and the origin mode of each traveller captured by the railroad.

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

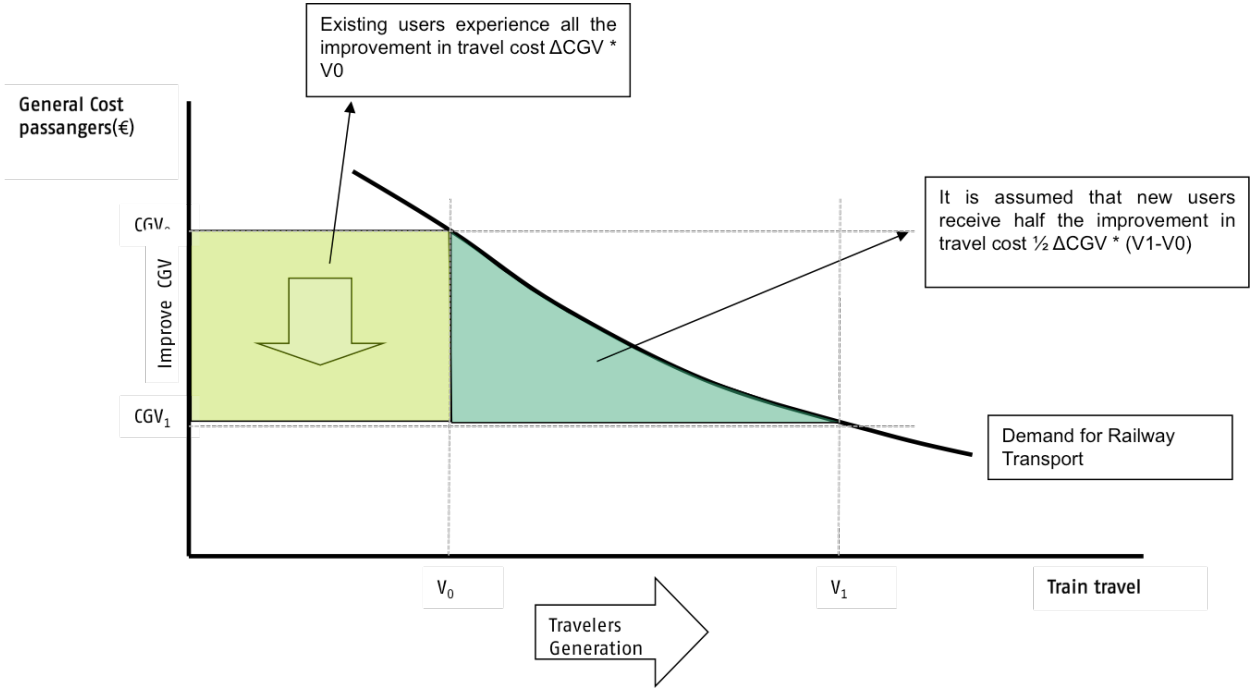
The monetary valuation of the time is carried out in each profitability study from the values of €/hour of the European project "Developing Harmonized European Approaches for Transport Costing and Project Assessment (HEATCO)", differentiating by reason of travel (Obligation/work and non-obligation/other reasons).

B Net consumer surplus of new passengers – traffic generated / induced

As already described above, traffic generated or induced is understood as the new users that make their trip thanks to the improvement produced by the commissioning of the new railway infrastructure project, and that in the reference situation, where the improvement does not improve transportation, they do not take the trip.

To estimate the monetary value of the consumer surplus of these new travellers in each Origin-Destination relationship, the methodology established by the Guide for the Analysis of Cost Benefit of Investment Projects, published by the European Commission of Regional Policy in 2014, is used. as the rule of half.

Calculation of the net surplus of the consumer of new travellers. "Rule of the half"



C Savings in operating or operating costs in other modes (other than rail).

The attraction of travellers from other modes by the new rail services produces a global decrease in operating or operating costs in these modes.

The monetization of this saving is obtained by the product of the number of travellers transferred from the different modes of transport to the railroad, by the unit cost of operation per traveller in its mode of origin.

D Accident savings

The variation in the cost of accidents comes from the distinct probability of suffering accidents between the railway mode in the project and the mode of origin of the passengers captured or transferred to the railway.

For the monetization of this saving, the product of the number of passengers transferred from the different modes of transport to the railway is calculated, by the unit cost of accidents per traveller in their way of origin.

E Saving environmental costs

Includes the set of environmental savings derived from the project, and includes:

- Savings in net costs due to impact on climate change. Corresponds to the costs to avoid the negative effects of climate change due to Greenhouse Gas (GHG) emissions. For the transport sector, the relevant emissions are carbon dioxide, nitrogen dioxide and methane.
- Savings in net costs due to impact on atmospheric pollution. Related to the costs for the adverse effects of air pollution (mainly particles, nitrogen oxides, sulphur dioxide, volatile organic compounds and ozone): effects on health, buildings and materials and crops.
- Savings in net costs due to impact of noise or noise pollution. For these types of projects, the impact on the global impact can be very low or practically negligible. Its main incidence is in the sections passing through the cities affected by the project, and its effect is usually reduced by corrective measures, such as acoustic screens.
- Savings in net costs due to indirect environmental impacts. Relating to indirect effects of transport activity, such as the production of energy (fuel and electricity), vehicle production or infrastructure.
- Savings in net costs due to impact on biodiversity loss. Both air pollution and the fragmentation of habitats by infrastructure can adversely affect biodiversity.
- Savings in net costs due to the impact on soil and water pollution, derived from the negative impacts on soil and water pollution of transport infrastructures, as well as contamination by heavy metals or hydrocarbons.
- Savings in net costs due to impact on nature and landscape. It refers to the costs that are estimated to be necessary to improve the existing infrastructures according to the needs of the environment. These are repair and compensation costs.
- Savings in net costs due to urban effects. Relative to the cost caused by traffic in urban areas, especially for non-motorized transport, due to the scarcity of space and the time lost by citizens who walk on foot due to barrier effects.

For the calculation of these environmental savings and their monetization, the unit costs of the "Study of External Costs of Transport in Europe" carried out by CE Delft, INFRAS and Fraunhofer in November 2011, (hereinafter External Cost Study) prepared by commissioned by the European Commission, and whose scope of reference is the EU-27, together with Switzerland and Norway.

In this External Cost Study, the average EU unit costs are presented for each of the concepts that are part of the environmental costs, as well as for the cost of accidents, and expressed in euros per 1,000 travellers-km and in euros per 1,000 tonnes in the case of goods.

In the following tables you can see the values of the study:

Total external unit costs in the EU-27 per mode of transport for passengers and goods

Table 2. Total external costs 2008 for EU-27* by cost category and transport mode

TOTAL COSTS PER COST CATEGORY									
	ROAD					RAIL		AVIATION	WATERBORNE (freight)
	Passenger cars	Buses & coaches	Motorcycles & mopeds	LDV	HDV	Passenger transport	Freight transport	Passenger transport (cont.)	Inland waterways
Cost category	**Mio €/a**	**Mio €/a**	**Mio €/a**	**Mio €/a**	**Mio €/a**	**Mio €/a**	**Mio €/a**	**Mio €/a**	**Mio €/a**
Accidents	157,105	6,839	22,584	18,677	19,604	238	71	223	0
Air pollution	26,636	3,347	1,696	5,933	12,995	1,092	483	426	782
Climate change high scen.	84,135	5,060	1,597	14,787	18,845	630	413	22,166	516
Climate change low scen.	14,407	866	273	2,532	3,227	108	71	3,796	88
Noise	8,201	865	2,076	2,094	3,537	477	476	457	0
Up- & downstream Proc. high scen.	27,679	1,568	523	4,765	5,802	3,354	1,947	3,356	194
Up- & downstream Proc. low scen.	16,621	855	325	2,777	3,270	1,633	1,078	1,849	113
Nature & landscape	3,008	149	75	284	1,293	75	21	296	64
Biodiversity Losses	1,152	212	20	208	893	1	1	40	69
Soil & water pollution	1,582	485	40	601	1,629	220	164	0	0
Urban effects	4,814	232	116	1,035	965	229	59	0	0
Total (high scenario)	**314,310**	**18,757**	**28,727**	**48,384**	**65,564**	**6,318**	**3,636**	**26,964**	**1,625**
Road congestion (delay costs): min	98,416	4,836	2,439	13,827	26,695	:	:	:	:
Road congestion (delay costs): max.	161,331	7,729	3,841	27,633	42,660	:	:	:	:

Data include the EU-27 with the exemption of Malta and Cyprus, but including Norway and Switzerland: ":": not aplicable. Total excluding congestion costs.

Source: Study of External Costs of Transport in Europe. CE Delft, INFRAS and Fraunhofer 2011.

Unitary external costs by mode of transport for travellers and goods

Table 14. Average external costs 2008 for EU-27* by cost category and transport mode (excluding congestion)

AVERAGE COSTS PER COST CATEGORY													
	PASSENGER TRANSPORT							FREIGHT TRANSPORT					
	ROAD				RAIL	AVIATION	TOTAL	ROAD			RAIL	WATERBORNE	TOTAL
	Passenger cars	Buses & coaches	Motorcycles & mopeds	Total road passenger transport	Passenger transport	Passenger transport (cont.)		LDV	HDV	Total road freight transport	Freight transport	Freight transport	
Cost category	**€/(1,000 pkm*a)**	**€/(1,000 pkm*a)**	**€/(1,000 pkm*a)**	**€/(1,000 pkm*a)**	**€/(1,000 pkm*a)**	**€/(1,000 pkm*a)**	**€/(1,000 pkm*a)**	**€/(1,000 tkm*a)**	**€/(1,000 tkm*a)**	**€/(1,000 tkm*a)**	**€/(1,000 tkm*a)**	**€/(1,000 tkm*a)**	**€/(1,000 tkm*a)**
Accidents	32.3	12.3	156.6	33.6	0.6	0.5	29.0	56.2	10.2	17.0	0.2	0.0	13.4
Air pollution	5.5	6.0	11.8	5.7	2.6	0.9	5.2	17.9	6.7	8.4	1.1	5.4	7.1
Climate change high scen.	17.3	9.1	11.1	16.3	1.5	46.9	17.6	44.5	9.8	14.9	0.9	3.6	12.1
Climate change low scen.	3.0	1.6	1.9	2.8	0.3	8.0	3.0	7.6	1.7	2.6	0.2	0.6	2.1
Noise	1.7	1.6	14.4	2.0	1.2	1.0	1.9	6.3	1.8	2.5	1.0	0.0	2.1
Up- & downstream Proc. high scen.	5.7	2.8	3.6	5.4	8.1	7.1	5.7	14.3	3.0	4.7	4.2	1.3	4.4
Up- & downstream Proc. low scen.	3.4	1.5	2.3	3.2	3.9	3.9	3.3	8.4	1.7	2.7	2.4	0.8	2.5
Nature & landscape	0.6	0.3	0.5	0.6	0.2	0.6	0.6	0.9	0.7	0.7	0.0	0.4	0.6
Biodiversity Losses	0.2	0.4	0.1	0.2	0.0	0.1	0.2	0.6	0.5	0.5	0.0	0.5	0.4
Soil & water pollution	0.3	0.9	0.3	0.4	0.5	0.0	0.4	1.8	0.8	1.0	0.4	0.0	0.8
Urban effects	1.0	0.4	0.8	0.9	0.6	0.0	0.8	3.1	0.5	0.9	0.1	0.0	0.7
Total (high scenario)	**64.7**	**33.8**	**199.2**	**65.1**	**15.3**	**57.1**	**61.3**	**145.6**	**34.0**	**50.5**	**7.9**	**11.2**	**41.7**
Total (low scenario)	***48.1***	***24.9***	***49.4***	***49.4***	***9.8***	***15.0***	***44.3***	***102.8***	***24.6***	***36.1***	***5.3***	***7.7***	***29.7***

Data include the EU-27 with the exemption of Malta and Cyprus, but including Norway and Switzerland. Data do not include congestion costs.

Source: Study of External Costs of Transport in Europe. CE Delft, INFRAS and Fraunhofer 2011.

3.2. TIME SAVINGS

This indicator is the savings, expressed in thousands of hours, experienced by passengers captured by the high-speed rail. The calculation is made as a difference between the travel time in the project situation (travel time of each user between a source and a destination in the railway mode with the new high-speed line), and the time in reference situation or without project (travel time of each user between a source and a destination in the mode of transport originally used).

3.3. MODAL TRANSFER

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

This modal transfer indicator reflects the travellers-km (in thousands) that change their way, passing to the railroad as a consequence of the improvement of the transport that users experience through the new high-speed railway line.

In the project situation, passengers at high-speed rail include the generated/induced travellers, already defined above.

3.4. CO_2 TONS SAVINGS

For the calculation of this indicator, the CO_2 emission factors obtained in the External Cost Study were used. These factors, measured in grams of CO_2 per km vehicle, have been calculated for each country, differentiating by mode of transport, both for goods and for travellers.

The following table shows the values of these CO_2 emission factors, where the values corresponding to Spain have been highlighted in yellow.

Table 50. CO_2 (exhaust) emission factors

	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 freight 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
Country											
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	352	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
Luxenbourg	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**	**607**	**79**	**206**	**1,314**	**15,887**	**242**	**696**	**381**	**3,420**	**21,431**

Data source: TREMOVE (2010)

From the emission factors corresponding to Spain in the previous table, measured in grams of CO_2 per km vehicle, and the occupation ratios (travellers per vehicle) used in each profitability study, the necessary values are obtained to perform the calculation of saving tons of CO_2 for each project evaluated, which are shown in the following table.

	Railway Conv	Bus	Car	Plane	Railway Av
g CO_2 / vehicle-km	1018	607	191	20654	1018
Average occupation	180	39	1,8	150	260
g CO_2 / passengers-km	5.7	15.6	106.1	137.7	3.9
kg CO_2 / passenger-km	0.0057	0.0156	0.1061	0.1377	0.0039

	Freight Railway	Freight truck
g CO_2 / vehicle-km	3149	699
Average load	400	11.8
g CO_2 / tons-km	7.9	59.2
kg CO_2 / tons-km	0.0079	0.0592

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

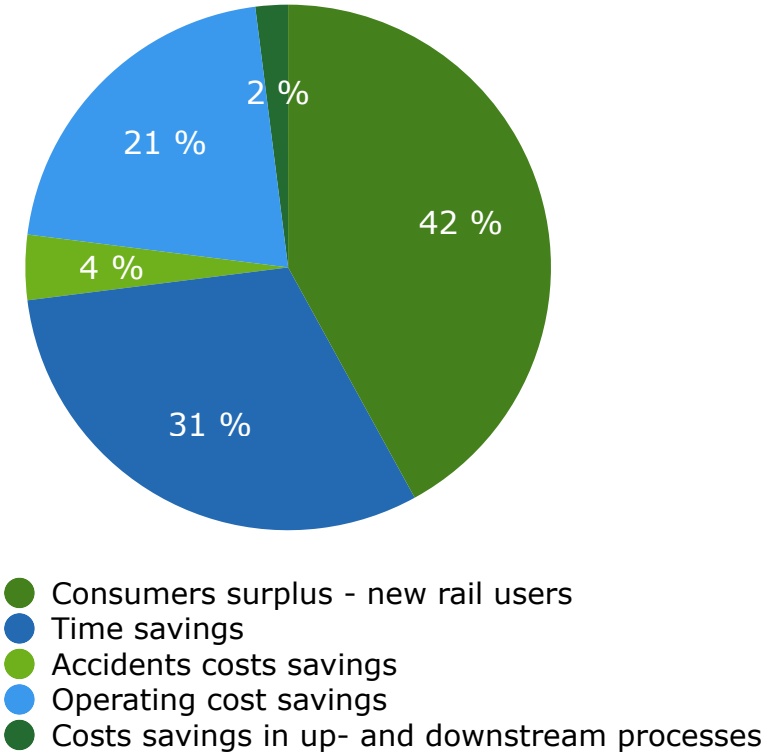
4. MADRID – LEVANTE HIGH SPEED LINE

4.1. EXTERNAL COSTS SAVING

These results are calculated for an evaluation period of 30 years from the commissioning of the first phase of the project (2011).

The total savings (expressed in VAN in 2011 at 3%, thousands of Euros of 2011) of this route is as follows:

SAVINGS (Thousands of Euros from 2011)	16,247,439
Consumer Surplus (due to generated traffic)	6,855,188
Time Savings	5.,018,366
Accident Savings	695,771
Operating Costs Savings	3,390,155
Environmental Cost Savings	287,959



4.2. TIME SAVINGS

The total hours saved throughout the 30 years of the study is summarized in the following table:

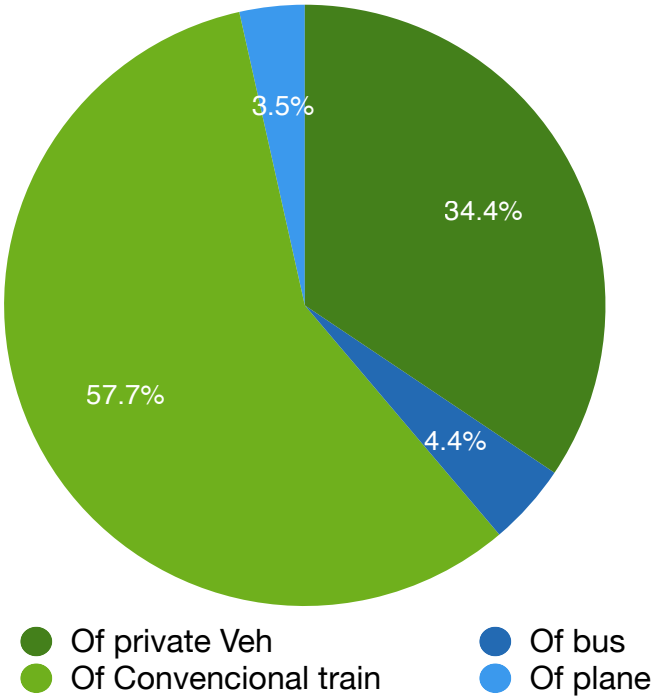
GLOBAL SUMMARY	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
Thousands of hours saved	283,178	9,439

4.3. MODAL TRANSFER

The following is a summary of the travellers who downloaded each mode and the percentage chart of modal transfer:

Travelers km transferred (thousands)	TOTAL (30 years)	ANNUAL AVERAGE
Private vehicle	32,838,353	1,094,612
Bus	4,197,197	139,907
Conventional train	55,095,573	1,836,519
Airplane	3,375,938	112,531
TOTAL Thousands of Travelers. Km Transferred	95,507,061	3,183,569

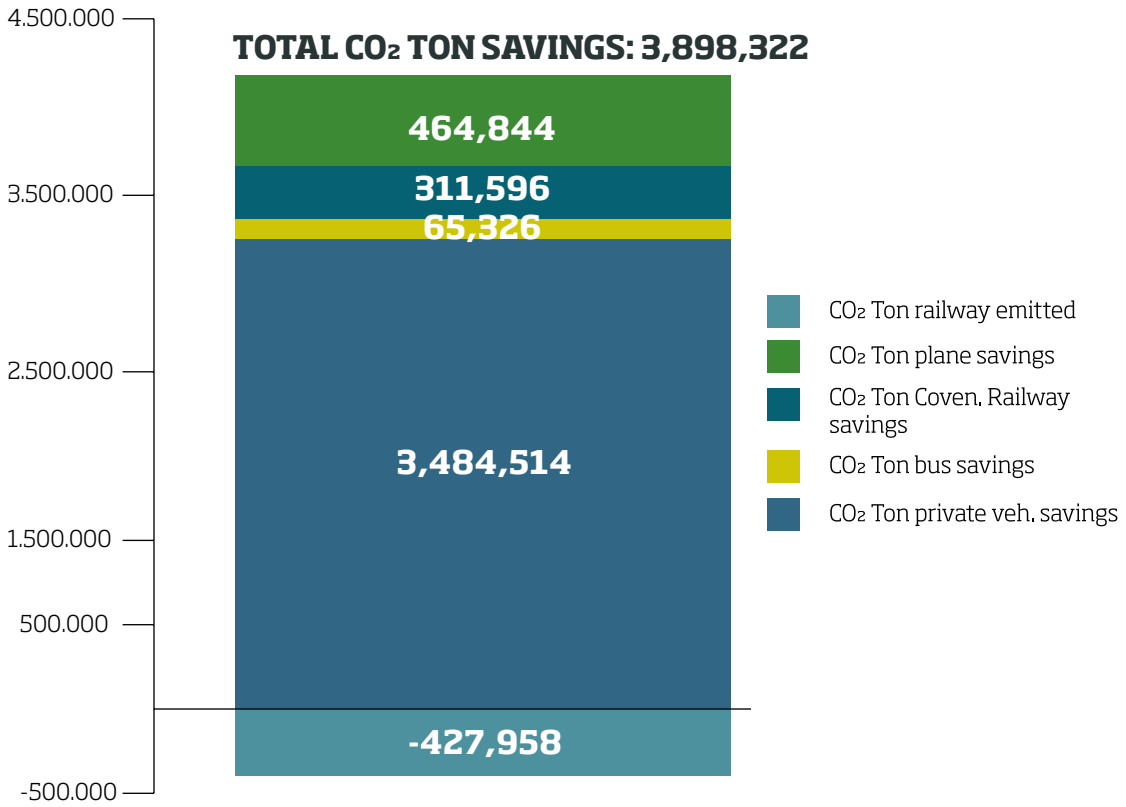
On the other hand, it should be noted that of the total of km travellers at high speed, 14.4% corresponds to induced travellers. Of the passengers transferred, the largest percentage comes from the conventional train itself with 57.7% and after the private vehicle with 34.4%.



4.4. CO_2 TONS SAVINGS

The savings of CO_2 by the traveller's km transferred from each mode of transport for the total period of analysis (30 years) are as follows.

LAV MADRID - LEVANTE	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
CO_2 Tonnes saved from the private vehicle	3,484,514	116,150
CO_2 Tonnes saved from the bus	65,326	2,178
CO_2 Tonnes saved from the conventional train	311,596	10,387
CO_2 Tonnes saved from the airplane	464,844	15,495
CO_2 emitted from the train	-427,958	-14,265
TOTAL CO_2 Tons SAVED	3,898,322	129,944



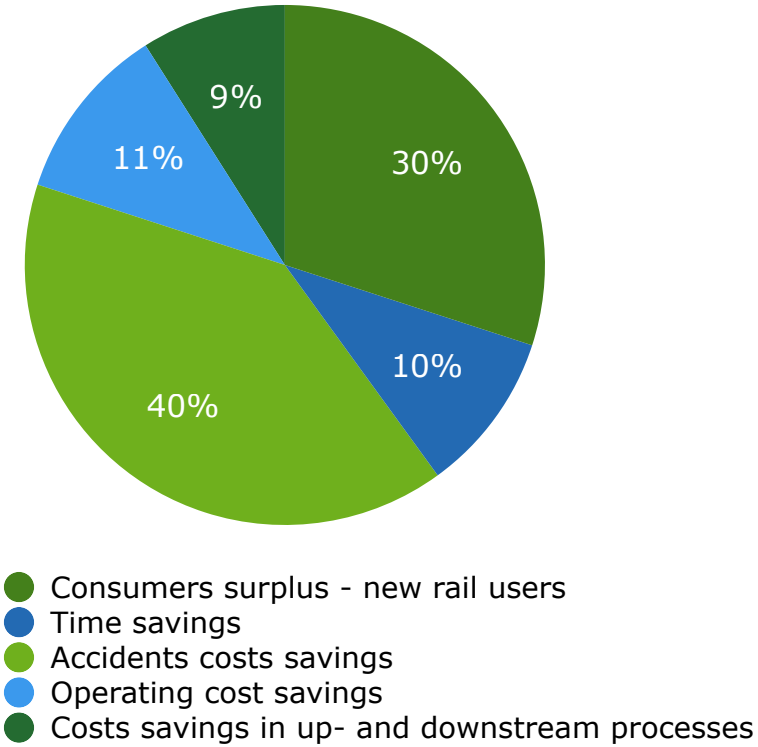
5. LÍNEA DE ALTA VELOCIDAD ANTEQUERA – GRANADA

5.1. EXTERNAL COSTS SAVING

These results are calculated for an evaluation period of 30 years from the commissioning of the project (2018).

The total savings (expressed in VAN in 2018 at 3%, thousands of Euros in 2015) of this line is as follows:

SAVINGS (Thousands of Euros from 2011)	2,283,881
Consumer Surplus (due to generated traffic)	205,709
Time Savings	683,677
Accident Savings	240,372
Operating Costs Savings	909,627
Environmental Cost Savings	244,497



5.2. TIME SAVINGS

The total hours saved throughout the 30 years of the study is summarized in the following table:

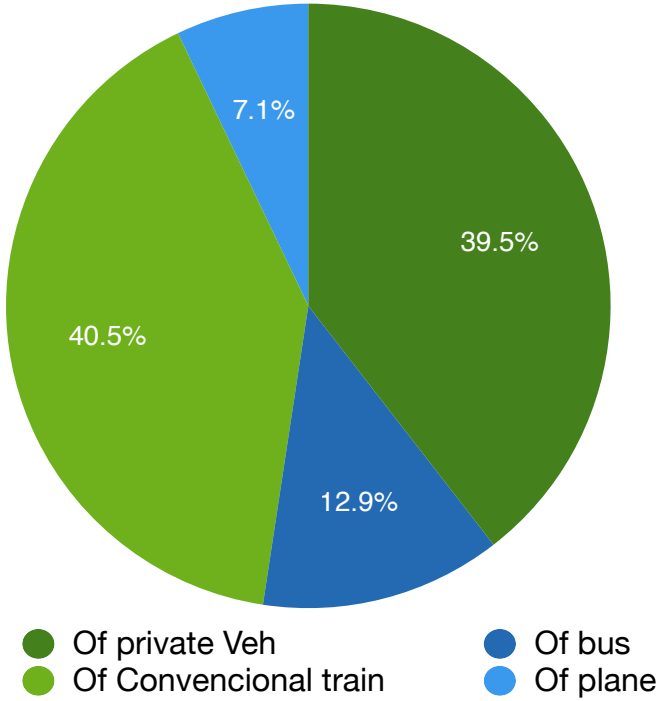
GLOBAL SUMMARY	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
Thousands of hours saved	56,478	1,883

5.3. MODAL TRANSFER

The following is a summary of the travellers who downloaded each mode and the percentage chart of modal transfer:

Travelers km transferred (thousands)	TOTAL (30 years)	ANNUAL AVERAGE
Private vehicle	10,554,836	351,828
Bus	3,444,035	114,801
Conventional train	10,834,862	361,162
Airplane	1,894,223	63,141
TOTAL Thousands of Travelers.km Transferred	26,727,956	890,932

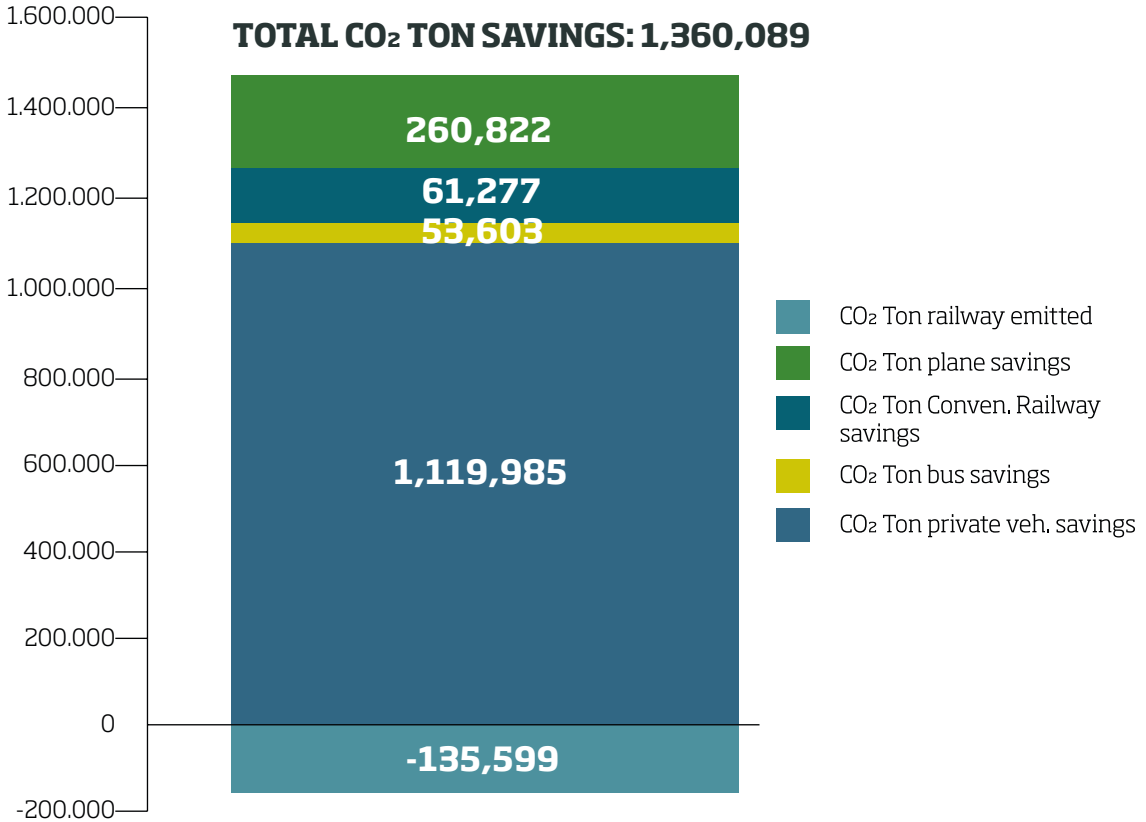
On the other hand, it should be noted that of the total of km travellers at high speed, 15.1% corresponds to induced travellers. Of the travellers that were transferred, the largest percentage comes from the conventional train with 40.5% and after the private vehicle with 39.5%.



5.4. CO_2 TONS SAVINGS

The savings of CO_2 by the traveller's km transferred from each mode of transport for the total period of analysis (30 years) are as follows.

LAV ANTEQUERA - GRANADA	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
CO_2 Tonnes saved from the private vehicle	1,119,985	37,333
CO_2 Tonnes saved from the bus	53,03	1,787
CO_2 Tonnes saved from the conventional train	61,277	2,043
CO_2 Tonnes saved from the airplane	260,822	8,694
Ton CO_2 emitted from the train	-135,599	-4,520
TOTAL CO_2 TONS SAVED	1,360,089	45,336



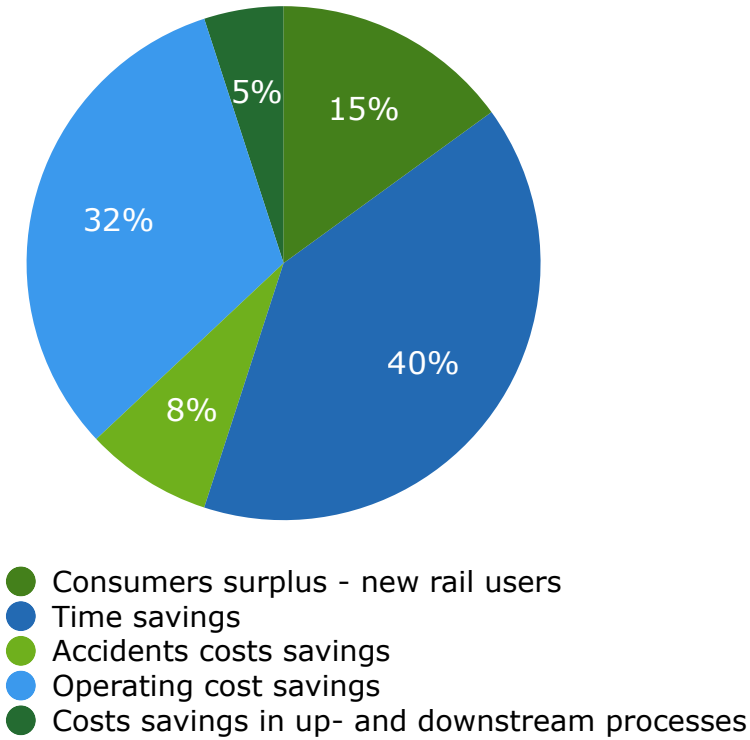
6. VALLADOLID–BURGOS–VITORIA HIGH SPEED LINE

6.1. EXTERNAL COSTS SAVING

These results are calculated for an evaluation period of 30 years from the commissioning of the first phase of the project (2019).

The total savings (expressed in VAN in 2019 at 3%, thousands of Euros of 2016) of this route is as follows:

SAVINGS (Thousands of Euros from 2016)	4.733.151
Consumer Surplus (due to generated traffic)	697,189
Time Savings	1,915,172
Accident Savings	353,545
Operating Costs Savings	1,514,149
Environmental Cost Savings	253,096



6.2. TIME SAVINGS

The total hours saved throughout the 30 years of the study is summarized in the following table:

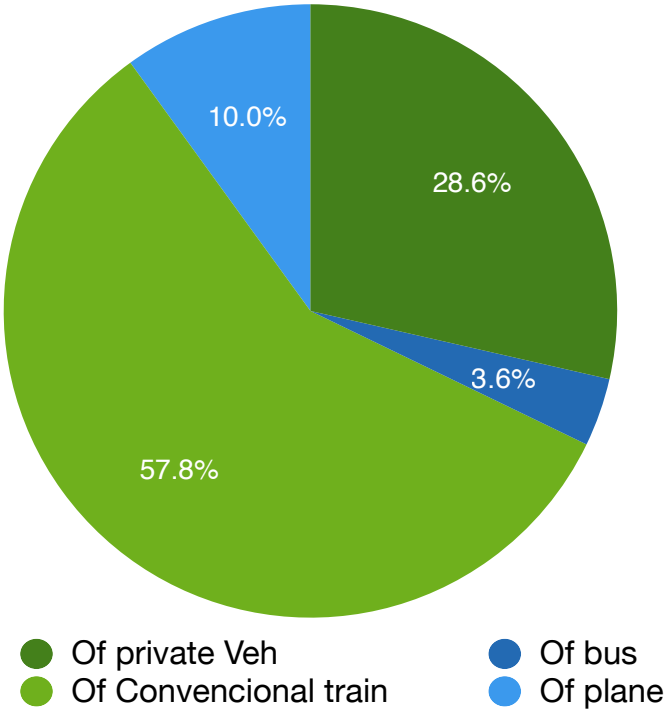
GLOBAL SUMMARY	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
Total Miles de horas ahorradas	114,677	3,823

6.3. MODAL TRANSFER

The following is a summary of the travellers who downloaded each mode and the percentage chart of modal transfer:

Travelers km transferred (thousands)	TOTAL (30 years)	ANNUAL AVERAGE
Private vehicle	17,281,210	576,040
Bus	2,156,858	71,895
Conventional train	34,945,031	1,164,834
Airplane	6,014,088	200,470
TOTAL Thousands of Travelers.km Transferred	60,397,188	2,013,240

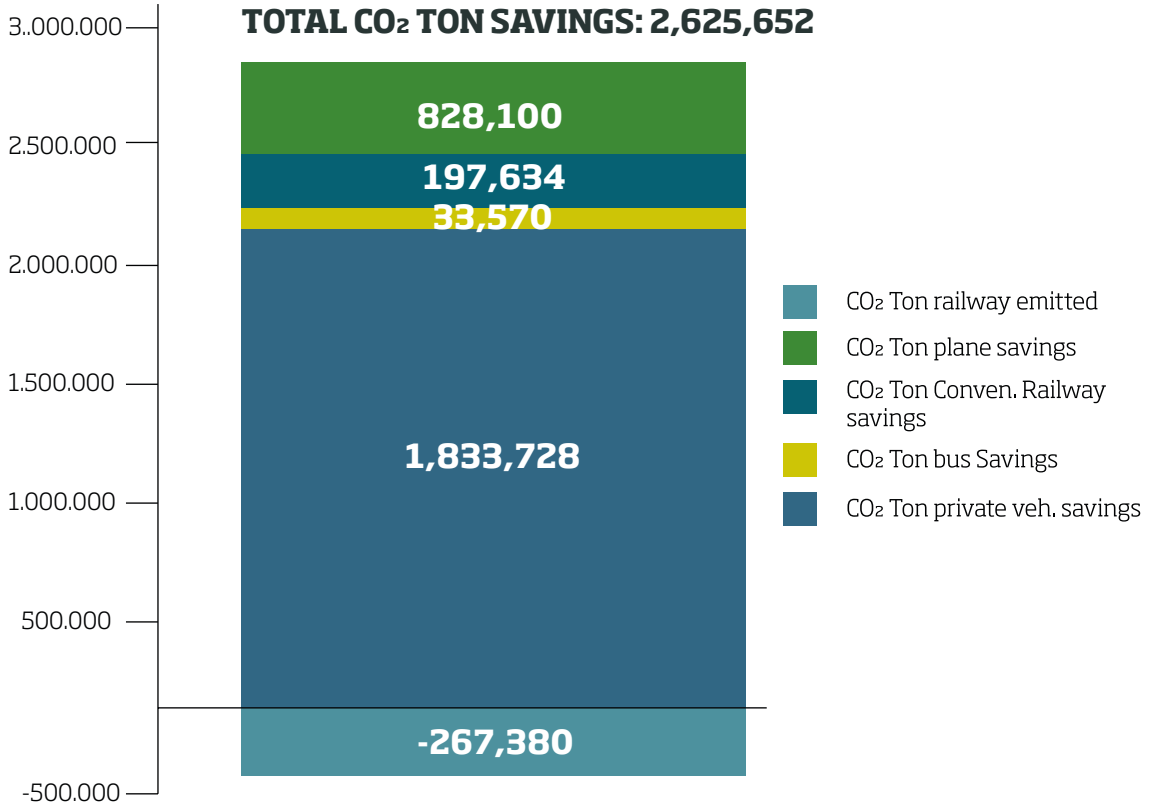
On the other hand, it should be noted that of the total of km travellers at high speed, 12.5% corresponds to induced travellers. Of the travellers that were transferred, the largest percentage comes from the conventional train with 57.9% and after the private vehicle with 28.6%.



6.4. CO_2 TONS SAVINGS

The savings of CO_2 by the traveller's km transferred from each mode of transport for the total period of analysis (30 years) are as follows

LAV VALLADOLID-BURGOS-VITORIA	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
CO_2 Tonnes saved from the private vehicle	1,833,728	61,124
CO_2 Tonnes saved from the bus	33,570	1,119
CO_2 Tonnes saved from the conventional train	197,634	6,588
CO_2 Tonnes saved from the airplane	828,100	27,603
Ton CO_2 emitted from the train	(267,380)	-8,913
TOTAL CO_2 TONS SAVED	2,625,652	87,522



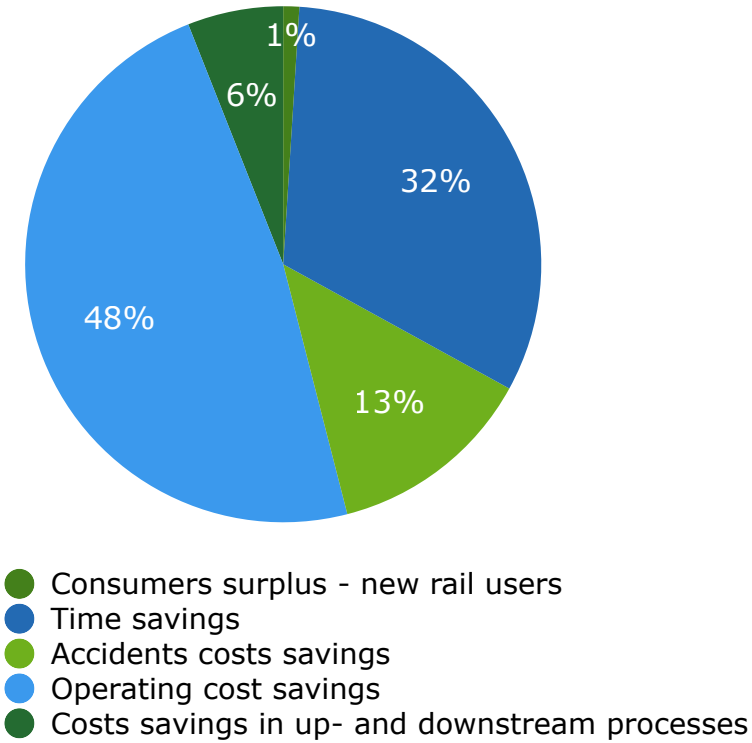
7. MADRID – EXTREMADURA HIGH SPEED LINE

7.1. EXTERNAL COSTS SAVING

These results are calculated for an evaluation period of 30 years from the commissioning of the first phase of the project (2019).

The total savings (expressed in VAN in 2019 at 3%, thousands of Euros in 2015) of this route is as follows:

SAVINGS (Thousands of Euros from 2015)	4,832,143
TRAVELLERS	
Consumer Surplus (due to generated traffic)	56,896
Time Savings	1,539,693
Accident Savings	564,623
Operating Costs Savings	2,187,992
Environmental Cost Savings	195,553
GOODS	
Accident Savings	55,335
Operating Costs Savings	153,249
Environmental Cost Savings	78,803



7.2. TIME SAVINGS

The total hours saved throughout the 30 years of the study is summarized in the following table:

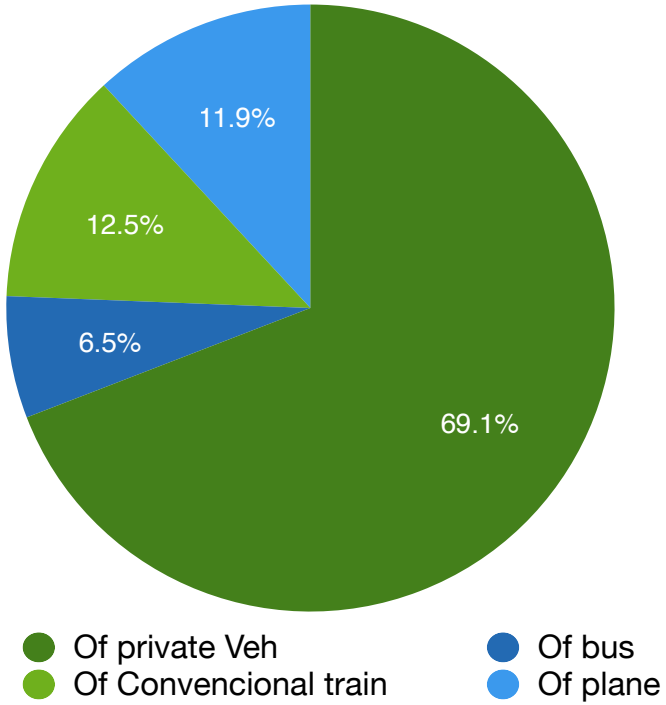
GLOBAL SUMMARY	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
Thousands of hours saved	123,826	4,128

7.3. MODAL TRANSFERS

The following is a summary of the travellers who downloaded each mode and the percentage chart of modal transfer:

Travelers km transferred (thousands)	TOTAL (30 years)	ANNUAL AVERAGE
Private vehicle	31,844,059	1,061,469
Bus	2,982,067	99,402
Conventional train	5,731,036	191,035
Airplane	5,474,636	182,488
TOTAL Thousands of Travelers. Km Transferred	46,031,797	1,534,393

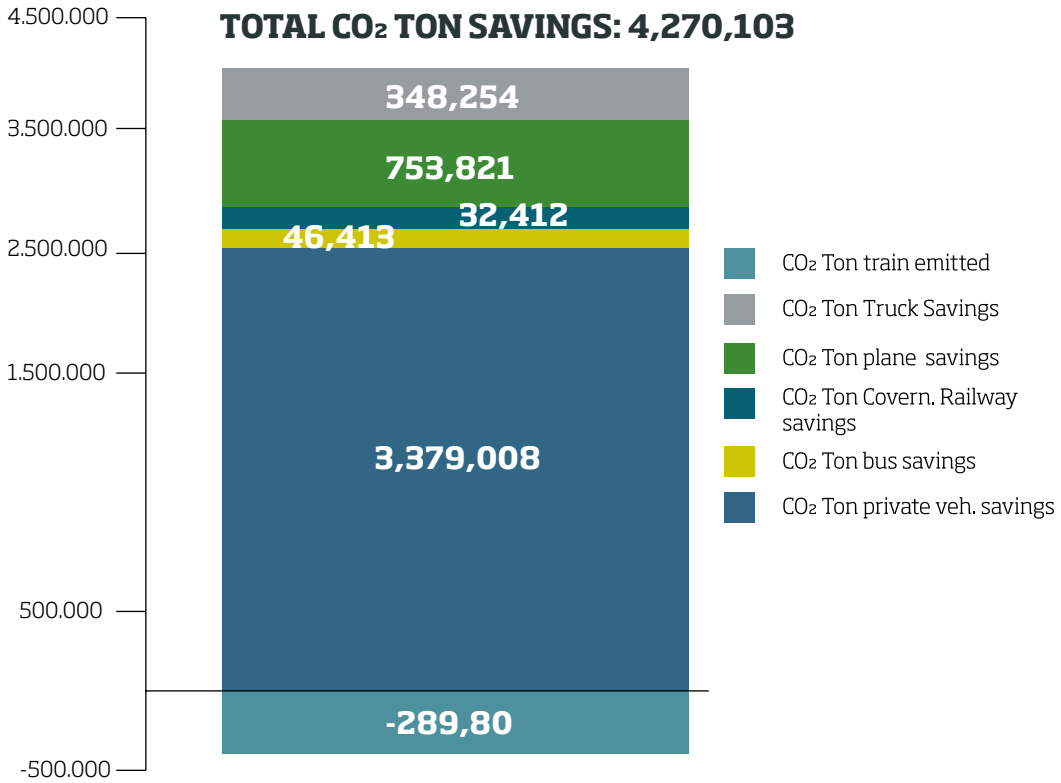
On the other hand, it should be noted that of the total number of km travellers at high speed, 7.9% corresponds to induced travellers. Of the travellers transferred, the highest percentage comes from the private vehicle with 69.2% and after the plane with 11.9%.



7.4. CO_2 TONS SAVINGS

The savings of CO_2 by the traveller's km transferred from each mode of transport for the total period of analysis (30 years) are as follows.

LAV MADRID - EXTREMADURA	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
CO_2 Tonnes saved from the private vehicle	3,379,008	112,634
CO_2 Tonnes saved from the bus	46,413	1,547
CO_2 Tonnes saved from the conventional train	32,412	1,080
CO_2 Tonnes saved from the airplane	753,821	25,127
Ton CO_2 emitted from the truck	348,254	11,608
Ton CO_2 emitted from the train	-289,805	-9,660
TOTAL CO_2 Tons SAVED	4,270,103	142,337



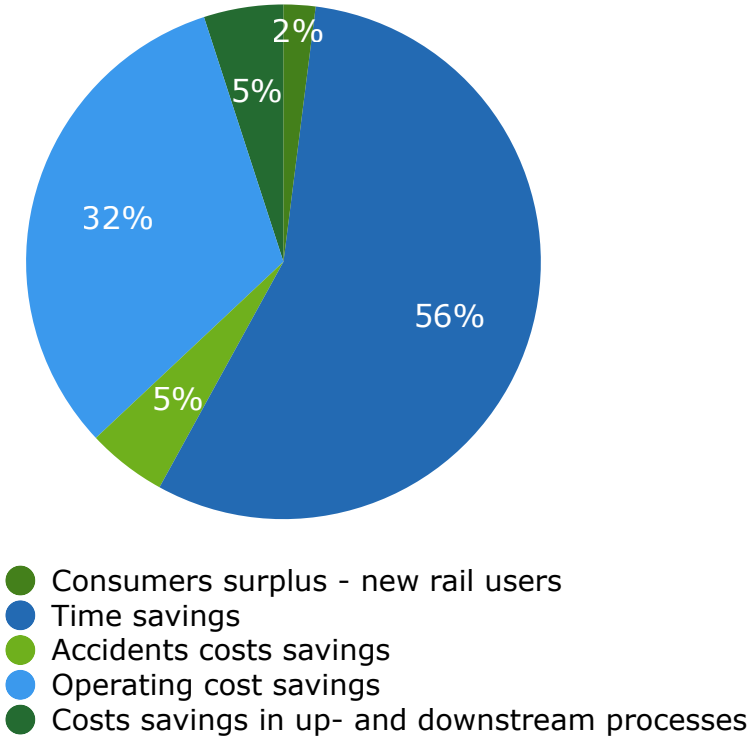
8. MADRID – GALICIA HIGH SPEED LINE: Olmedo – Zamora – Ourense – Santiago de Compostela Stretch

8.1. EXTERNAL COSTS SAVING

These results are calculated for an evaluation period of 30 years from the commissioning of the first phase of the project (2015).

The total savings (expressed in VAN in 2015 at 5.5%, thousands of Euros of 2012) of this route is as follows:

SAVINGS (Thousands of Euros from 2012)	5,580,692
Consumer Surplus (due to generated traffic)	125,238
Time Savings	3,122,052
Accident Savings	287,101
Operating Costs Savings	1,760,930
Environmental Cost Savings	285,371



8.2. TIME SAVINGS

The total hours saved throughout the 30 years of the study is summarized in the following table:

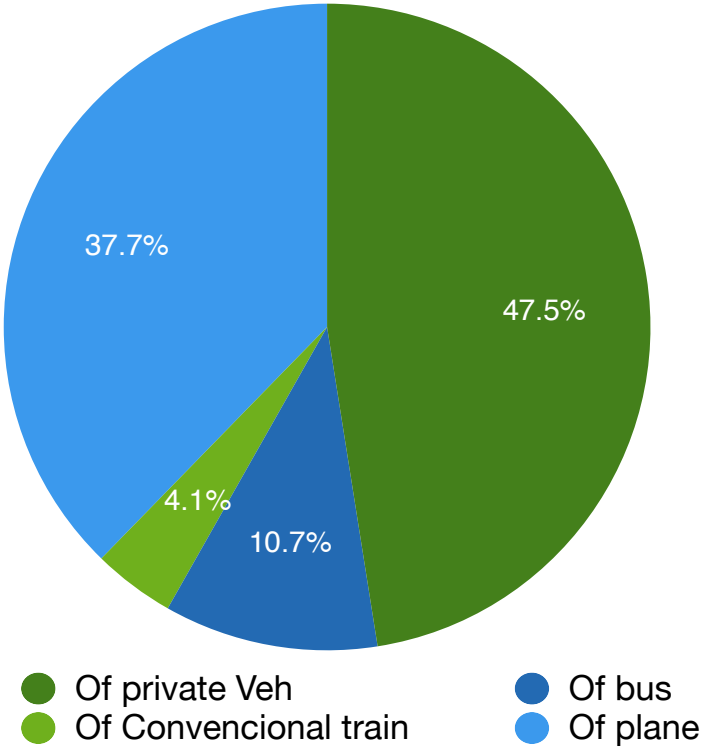
RESUMEN GLOBAL	TOTAL (30 años)	AHORRO MEDIO ANUAL
Thousands of hours saved	202,905	6,763

8.3. MODAL TRANSFER

The following is a summary of the travellers who downloaded each mode and the percentage chart of modal transfer:

Travelers km transferred (thousands)	TOTAL (30 years)	ANNUAL AVERAGE
Private vehicle	18,275,843	609,195
Bus	4,111,011	137,034
Conventional train	1,589,269	52,976
Airplane	14,526,314	484,210
TOTAL Thousands of Travelers.km Transferred	38,502,437	1,283,415

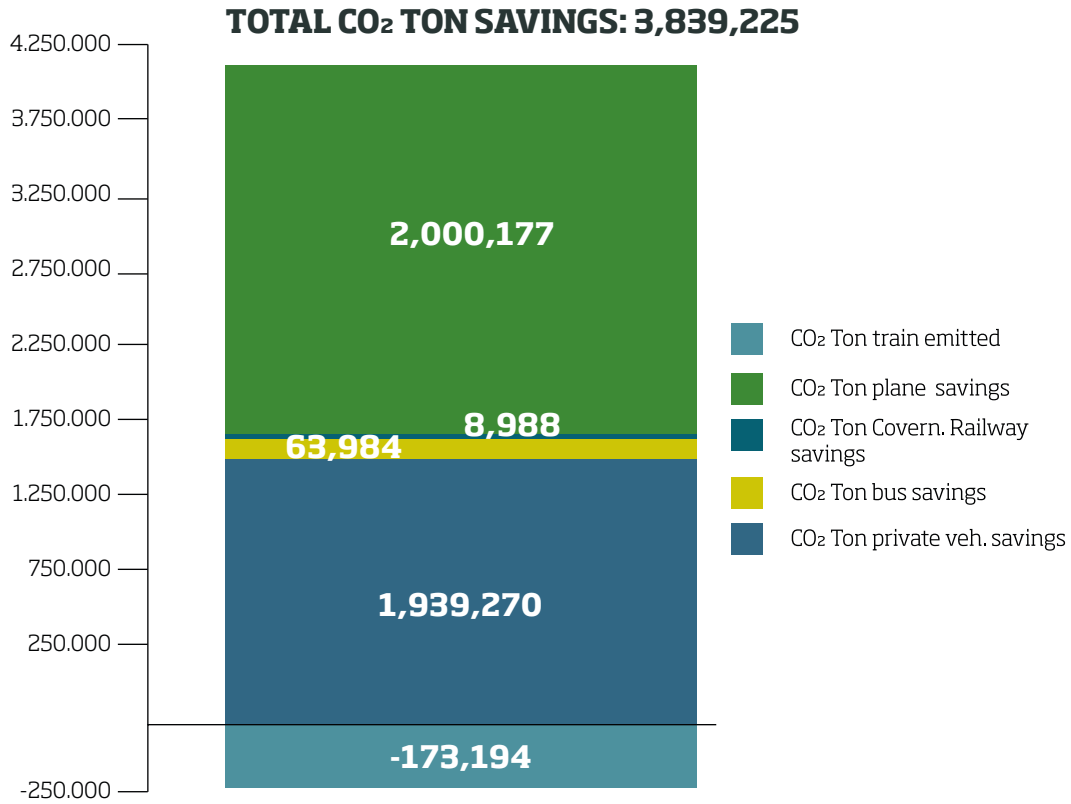
On the other hand, note that of the total of km travellers at high speed, 7.6% corresponds to induced travellers. Of the travellers transferred, the highest percentage comes from the private vehicle with 47.5% and after the plane with 37.7%.



8.4. CO_2 TONS SAVINGS

The savings of CO_2 by the traveller's km transferred from each mode of transport for the total period of analysis (30 years) are as follows.

MADRID -GALICIA HIGH SPEED LINE: Olmedo - Zamora - Ourense - Santiago de Compostela Stretch	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
CO_2 Tonnes saved from the private vehicle	1,939,270	64,642
CO_2 Tonnes saved from the bus	63,984	2,133
CO_2 Tonnes saved from the conventional train	8,988	300
CO_2 Tonnes saved from the airplane	2,000,177	66,673
Ton CO_2 emitted from the train	-173,194	-5,773
TOTAL CO2 Tons SAVED	3,839,225	127,974



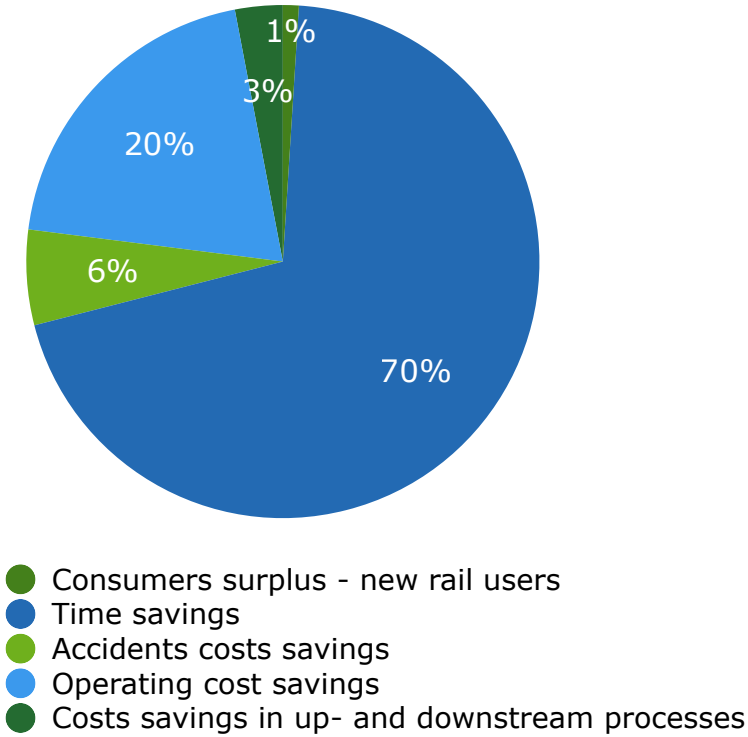
9. ATLANTIC AXIS STRETCH: Santiago de Compostela – Vigo High Speed Line

9.1. EXTERNAL COSTS SAVING

These results are calculated for an evaluation period of 30 years from the commissioning of the first phase of the project (2016).

The total savings (expressed in VAN in 2016 at 3%, thousands of Euros of 2015) of this route is as follows:

SAVINGS (Thousands of Euros from 2016)	2,265,564
Consumer Surplus (due to generated traffic)	23,650
Time Savings	1,592,161
Accident Savings	132,420
Operating Costs Savings	461,022
Environmental Cost Savings	56,311



9.2. TIME SAVINGS

The total hours saved throughout the 30 years of the study is summarized in the following table:

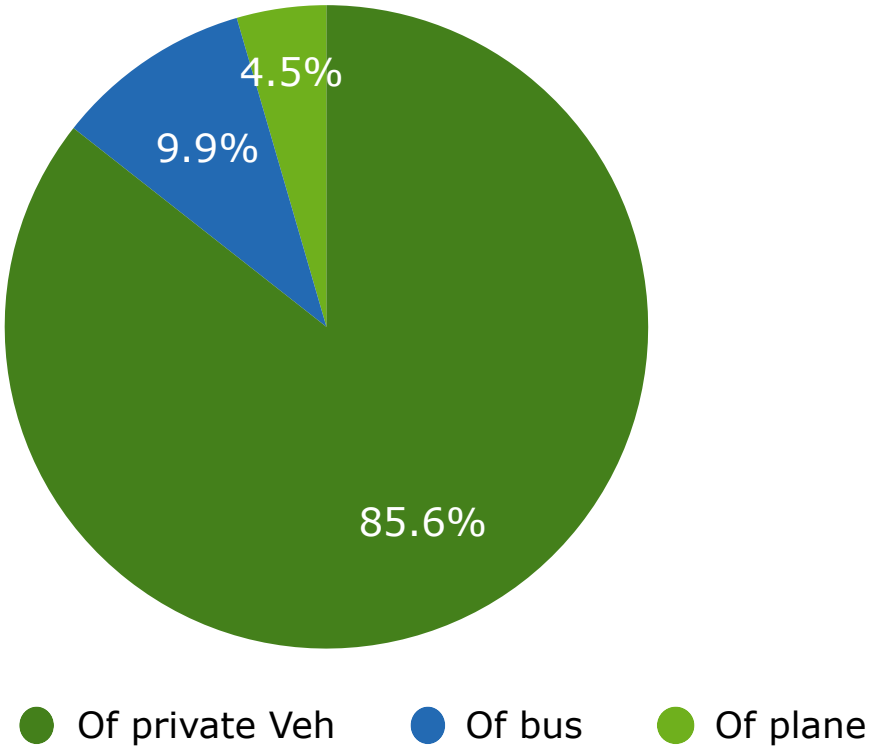
GLOBAL SUMMARY	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
Thousands of hours saved	84,509	2,817

9.3. MODAL TRANSFER

The following is a summary of the travellers who downloaded each mode and the percentage chart of modal transfer:

Travelers km transferred (thousands)	TOTAL (30 years)	ANNUAL AVERAGE
Private vehicle	6,427,144	214,238
Bus	741,883	24,729
Airplane	339,677	11,323
TOTAL Thousands of Travelers.km Transferred	7,508,705	250,290

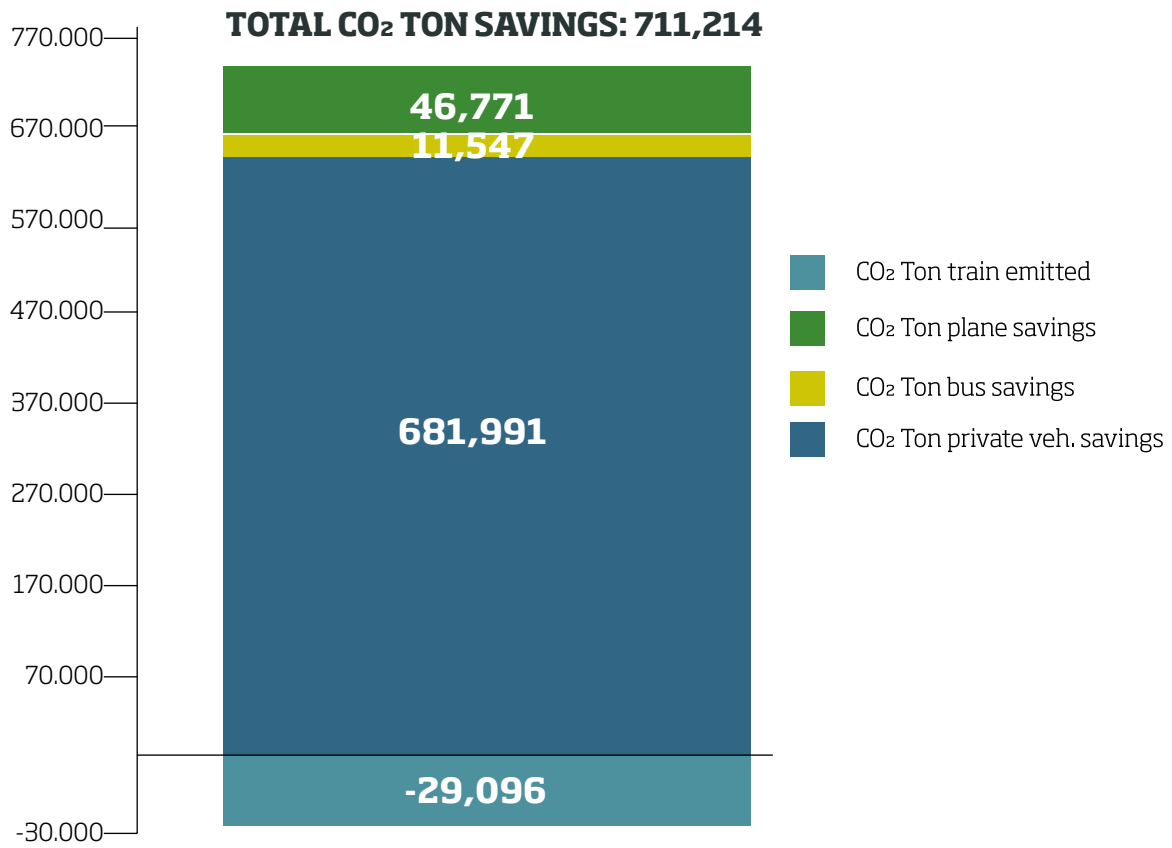
On the other hand, it should be noted that of the total of km travellers at high speed, 1% corresponds to induced travellers. Of the travellers transferred, the highest percentage comes from the private vehicle with 85.6% and after the bus with 9.9%



9.4. CO_2 TONS SAVINGS

The savings of CO_2 by the traveller's km transferred from each mode of transport for the total period of analysis (30 years) are as follows

LAV SANTIAGO - VIGO	TOTAL (30 years)	AVERAGE ANNUAL SAVINGS
CO_2 Tonnes saved from the private vehicle	681,991	22,733
CO_2 Tonnes saved from the bus	11,547	385
CO_2 Tonnes saved from the airplane	46,771	1,559
Ton CO_2 emitted from the train	-29,096	-970
TOTAL CO_2 Tons SAVED	711,214	23,707



ALLOCATION OF FUNDS TO ELIGIBLE GREEN PROJECTS

As we indicated at the beginning of this report, the net amount of the funds obtained from the first ADIF- Alta Velocidad Green Bond, have been fully applied to the category of Eligible Green Projects: "Investments related to new routes and extensions of existing routes", established in the Green Bond Framework.

This category includes projects for the construction of high-speed lines that are already being executed or planned to be executed, as well as lines already put into service.

Below is a detail of such investments, made in 2016 and 2017.

HIGH SPEED ROUTES	EXECUTED AMOUNT 2016-2017 (thousands of euros)	FINANCING WITH GREEN BOND (thousands of euros)	GREEN BOND ALLOCATION (%)
L.A.V MADRID - LEVANTE	320,270.50	103.808,89	17.36%
L.A.V. ANTEQUERA - GRANADA	138,402.20	61.704,95	10,.2%
L.A.V. VALLADOLID - BURGOS - VITORIA	87,601.37	32.792,84	5.49%
L.A.V. MADRID - EXTREMADURA	131,475.62	62.765,02	10.50%
L.A.V. GALICIA (Olmedo - Lubián - Ourense - Santiago)	509,034.44	302.804,52	50.65%
ATLANTIC AXIS (Santiago - Vigo)	48,267.75	33.987,78	5.68%
TOTAL	**1,235,051.88**	**597,864.00**	**100.00%**

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Entidad Pública Empresarial ADIF-Alta velocidad

Independent Assurance Report

Independent Assurance Report

To the Board of Directors of ADIF-Alta Velocidad:

Scope of the work

We have performed a reasonable assurance engagement on the information in the Green Bond Annual Report of ADIF-Alta Velocidad, (hereinafter referred to as "ADIF-AV").

The specific matters which we have reviewed are:

- That the funds obtained from the Green Bond issue, as stated in the Green Bond Annual Report, have been allocated to the financing of projects which meet the "Green projects eligibility criteria" established by ADIF-AV and described in the mentioned Green Bond Annual Report.

- That the allocation of funds, responsible management and environmental and social outcomes of the financed projects, as stated in the Green Bond Annual Report, and their calculation, are in line with the "Green Bond Framework" established by ADIF-AV and described in the mentioned Green Bond Annual 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, and for establishing and updating the "Green projects eligibility criteria"

Our responsibility

Our responsibility is to issue an independent reasonable assurance report based on the work that we have carried out in accordance with the guidance of the ISAE 3000 Standard "Assurance Engagements Other than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC) for a reasonable level of assurance.

A reasonable assurance engagement consists of applying procedures to obtain evidence on the processes and controls used to prepare the Green Bond Appendix. The procedures selected depend on professional judgment and include an assessment of the risks of material inaccuracies due to fraud or error. In carrying out this risk assessment, we have taken into account relevant internal controls for adequate preparation and presentation by the company of the information to be reviewed, to establish review procedures which are appropriate in the circumstances.

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:

- Verification of traceability of funds from the moment when the Green Bond is collected until it is allocated to the selected Eligible Green Bonds projects, and their use, in accordance with the Green Bond Annual Report, by reviewing the support documentation of the movements made.

- 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, the correct allocation of the funds, the applicable internal standards and management systems, the procedures for collecting information and the control environment to obtain the information required for the external review.

- Review of the projects financed by green bonds to verify that they are in line with any of the "Eligible green projects categories".

- Review of the "Second opinion on ADIF-Alta Velocidad's Green Bond Framework", issued by an independent expert.Verification that until the total application of the net income obtained from the bonds in the Eligible Green Projects, ADIF-AV has kept an amount equal to the amount of the net income obtained not applied, in funds managed following responsible investment criteria (back accounts).

We consider that the evidence which we have obtained provides an adequate basis for our conclusions.

Independence

We have carried out our work in accordance with the independence standards required by the Code of Ethics of the International Federation of Accountants (IFAC).

In accordance with the International Standard on Quality Control (ISQC) 1, GT has a global quality control system which includes documented policies and procedures on the compliance of ethical requirements, professional standards and applicable regulations.

The work has been carried out by a team of people specialised in the company's social, environmental and financial performance.

Conclusion

In our opinion, on the basis of the work which we have carried out, the funds obtained from the Green Bond issue, as stated in the Green Bond Annual Report, have been allocated to the financing of projects which meet, in all significant aspects, the "Green projects eligibility criteria" established by ADIF-AV and described in the mentioned Green Bond Annual Report

Grant Thornton, S.L.P., Sociedad Unipersonal

Alfredo González del Olmo

16 March 2018

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