



# **ADIF-ALTA VELOCIDAD GREEN BOND FRAMEWORK**

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## 1. PRESENTATION

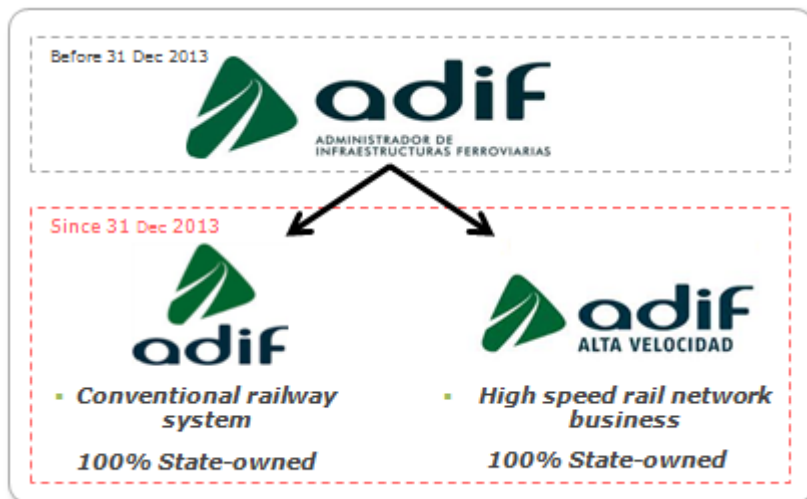
### 1.1 The Spanish Railway Sector

ADIF-Alta Velocidad is a state-owned public corporate entity (*"entidad pública empresarial"*) with legal personality, management autonomy and its own resources, operating under the supervision of the Ministry of Public Works (*"Ministerio de Fomento"*) of the Spanish Government. It was created after the split of ADIF (Administrador de Infraestructuras Ferroviarias) into two separate entities.

ADIF-Alta Velocidad is responsible for the construction and management of Spain's high speed rail network, as well as other activities such as management of the high-speed stations and the supply of energy.

This separation, due to its respective main activity and the significant differences that are presented from a technical, economic and financing point of view, has been approved by Royal Decree-Law 15/2013 of 13 December on restructuring of the public corporate entity "Administrador de Infraestructuras Ferroviarias" (ADIF) and other urgent measures in the economic order.

It responds, among others, to the criteria to deepen the rationalization of the railway sector in the field of state competence, to achieve the maximum efficiency of services in a scenario of progressive liberalization and to achieve budgetary stability.



Following the different EU Directives on train transportation, in 2003 the Spanish Parliament approved Law 39/2003 of the Railway Sector (amended by Law 38/2015 of the Railway Sector), opening the sector to competition in transport activities and enforcing the separation between operators and managers of the railway infrastructure.



## 1.2 Main figures of ADIF-Alta Velocidad

(Data as of 31 December 2016)

- High speed lines in operation:	2,534 km (*)
- No. Railway stations:	42
- No. Train circulations (year 2016):	254,725
- Train-kilometres (millions in a year):	48.29
- Fixed assets:	42,856 million €
- Net equity:	24,298 million €

(\*) Spain is the first country in Europe and the second in the world, after China, in the number of km of high speed lines in operation.

## 1.3 Commitment of ADIF-Alta Velocidad

ADIF-Alta Velocidad works to maintain collaborative relationships with all its stakeholders: citizens, users of railway services, investors, operators, public administrations, suppliers, environmentalists, etc.

Its commitment is positioning itself in each of these environments in an effective, operational and economically efficient position of service, under general criteria of sustainability.

### Objectives:

- *Increasing the overall efficiency of the railway system.*
- *Ensuring the safety of railway transport.*
- *Improving the articulation of national territory.*
- *Promoting social cohesion and sustainable development.*

- *Promoting the welfare of citizens and the quality of life.*

ADIF-Alta Velocidad is responsible for the management of a very important part of the investments in railway infrastructures and the administration of the high performance network.

Based on this responsibility, and those derived from the legal framework in which it operates (the Strategic Plan for Infrastructure, Transport and Housing - PITVI- and the Law of the Railway Sector), ADIF-Alta Velocidad has defined its mission and values:

**Mission:**

Development and management of a railway infrastructure system to be a safe, efficient and quality public service.

**Values:**

- *Being committed to safety.*
- *Providing added value to stakeholders.*
- *Workers are the main asset of the entity.*
- *Protecting the environment.*
- *Being creative: innovation.*
- *Being transparent, rational and efficient in the management of public resources.*

For more information:

“Our commitments”:

[http://www.adifaltavelocidad.es/es\\_ES/compromisos/eficiencia\\_economica/eficiencia\\_economica.shtml](http://www.adifaltavelocidad.es/es_ES/compromisos/eficiencia_economica/eficiencia_economica.shtml)

#### **1.4 ADIF-Alta Velocidad rationale to issue a Green Bond**

Consistent with the values mentioned above, the protection of the environment is developed in three lines of action.

Firstly, the environmental protection is aligned with the fundamental purpose of the entity. The greater environmental efficiency of rail transport compared to air transport and road transport is well known. This increased efficiency is particularly remarkable in terms of energy consumption and its derived atmospheric emissions, on a local, regional and global level, through the greenhouse gas emissions.

International experience in last decades has clearly demonstrated that the quality of high-speed rail systems is such that they are capable of capturing customers and users from other modes of transport. Such capture produces a modal shift of traffic from less environmentally efficient means of transport to the railway, a phenomenon based on free choice mechanisms and which has as its main consequence a reduction of environmental impacts on the transport corridors in which it occurs, as well as greenhouse emissions at global level.

Based on the foregoing, as the high-speed rail network is developed, the positive effect on the environment will continue to increase as significant amounts of traffic from road transport and air transport shift to the railway.

Secondly, it is clear that it is not possible to obtain the aforementioned development of the network if appropriate measures are not taken so that its design and construction minimizes the environmental impacts resulting from its execution.

In this case, the objective is to obtain the maximum degree of environmental integration of the new lines, starting from - as a minimum - compliance with the specifications contained in the resolutions of the Ministry of Environment and relating to both natural heritage and cultural, archaeological and paleontological heritage.

Finally, in third place, once the new lines are in operation, it is necessary to continue to deepen the process of environmental integration, in this case during the maintenance operations. The objectives are to continue guaranteeing the viability of the corrective and compensatory measures adopted during the construction phase, as well as to minimize as much as possible the new environmental impacts that can occur during the maintenance of the lines. Again, it is necessary to act at the level of the design and the construction works that constitute these operations.

Some figures can help to better understand these three lines of action:

- **Greater environmental efficiency**

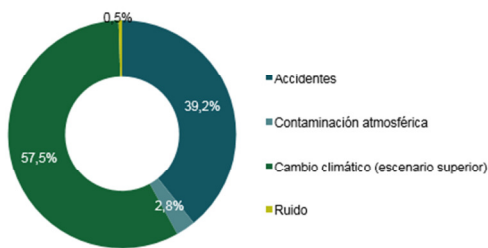
- While transporting 3% of travelers in Spain, in all modes, in 2013, ADIF-Alta Velocidad only used 0.28% of the final energy consumed by the transport sector as a whole, producing greenhouse gas emissions of around 0.72% of total transport sector.
- In terms of specific energy consumption, in order to transport a transport unit (traveler-Km.), ADIF-Alta Velocidad railway system required in 2014 a consumption of 5.3 times less than if the transport were by road, and 5.8 times less than if it had been made by plane.

These data imply that, in terms of their greenhouse gas emissions, each traveler-Km. moved by the infrastructures managed by ADIF-Alta Velocidad in 2014 emitted 14 times less than if it had used road transport and up to 16 times less than if it had used air transport. In other words, every traveler who travels using the infrastructures of ADIF-Alta Velocidad, instead of using the road, prevents 114 gr. CO<sub>2</sub> equivalent for each kilometer traveled. In total in 2015 these travelers avoided the consumption of 441,000 tonnes of oil equivalent and the emission of 1.5 million tonnes of CO<sub>2</sub> equivalent. If on top of energy consumption and its greenhouse gas emissions, we add the effects on local and regional air pollution, noise, nature and landscape, biodiversity, water and soil pollution, accidents, etc., and we value economically the set of impacts in terms of externalities, we obtain the following results:

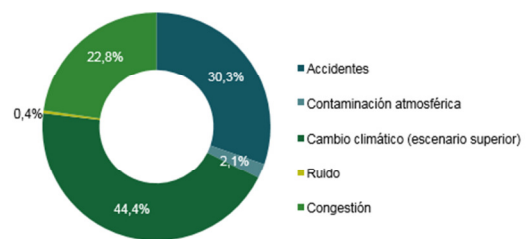
- The total external costs of transport in Spain, in 2015, exceeded 40,000 million euro, which represents a 3.7% of GDP. 67.10% of them are due to the transport of travelers.

All this without considering the costs of congestion, which in the case of road transport have exceeded 14 billion euros, which represents 1.3% of additional GDP.

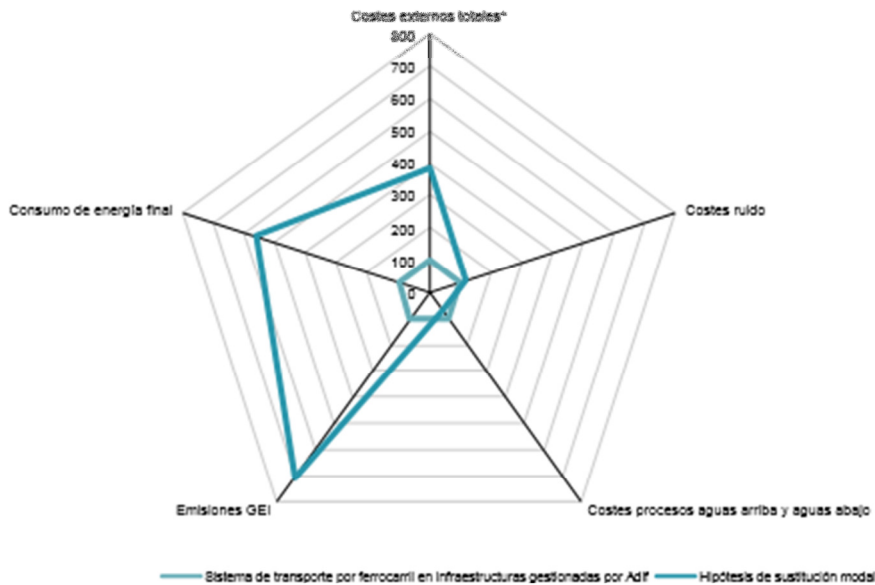
- With regards to the previous amount, the total external costs generated in the railway transport system managed by ADIF-Alta Velocidad in 2015 amounted to 202.4 million euro. However, given that externalities per unit of traffic (passenger-kilometer) are lower in the railway than in other modes of transport, when analyzing the total net saving represented by the mentioned system for society, we obtain a value that oscillates between 574 million and 748 million euro per year (if the effects of congestion are also considered). As new lines come into service, these savings will increase, so in 2014 the savings ranged between 510 and 667 million euro.



Distribution of external cost savings in the railway transport system managed by ADIF-Alta Velocidad.  
Total savings for externalities without considering management costs: 573.55 million euro.



Distribution of external cost savings in the railway transport system managed by ADIF-Alta Velocidad.  
Total savings for externalities considering congestion costs in all scenarios of modal shifting: 749.52 million euro. Year 2015.



\* Sin considerar los costes de congestión

- **Environmental integration of new lines**

- In 2005 ADIF developed an environmental management system that would ensure, not only compliance with the specific resolutions of the Ministry of Environment for each informative study of a new line (Environmental Impact Statement or DIA) and the relevant environmental legislation, but also their full environmental integration. The environmental management system was used during the drafting stages of basic and constructive projects, which display such informative studies, as well as during all the works that constitute the construction process of the lines (platform, track assembly, electrification, facilities, etc.) and for a period after they have been put into service of between 1 and 3 years.

This system is essential because ADIF-Alta Velocidad not only has the status of promoter of these actions, but also the status of a substantial entity, which entails specific responsibilities in Spanish environmental legislation on environmental impact assessment. Since 2005, this management system has evolved to the point where, in 2010, AENOR certified its compliance with the ISO: 14001 standard in the field of platform projects and the environmental management of the works. In 2015, this scope has been extended to all the projects that integrate the development and maintenance of high-speed lines.

- **Environmental integration of maintenance operations**

- Currently, in addition to what is reflected in the previous section regarding the projects of these operations, there is an environmental management system

for works and railway installations inherent to the maintenance of high-speed infrastructure, also certified according to ISO: 14001 standard from 2011.

All the actions described are part of the development of the ADIF-Alta Velocidad Environment Policy, which was approved by its President in June 2015.

More information on the environmental management of ADIF-Alta Velocidad can be found in its Environmental Report, which, on an annual basis, has been published since the creation of ADIF in 2005 and the establishment of ADIF-Alta Velocidad in 2013.

[http://www.adif/altavelocidad.es/es\\_ES/compromisos/doc/NC\\_Memor\\_Med\\_Amtal15.pdf](http://www.adif/altavelocidad.es/es_ES/compromisos/doc/NC_Memor_Med_Amtal15.pdf).

All data included in this framework can be verified in the report for the year 2015.

## **2. GREEN BOND FRAMEWORK**

This Green Bond Framework has been created in alignment with the Green Bond Principles (GBP) 2016, in order to facilitate transparency, disclosure and integrity of ADIF-Alta Velocidad Green Bond issues.

The five components included in the GBP are described below:

- Use of proceeds.
- Eligible Green Projects.
- Selection Process.
- Management of Proceeds.
- Reporting.

### **2.1 Use of Proceeds**

An amount equal to the net proceeds will be allocated for investments in one or more of the “Eligible Green Projects”.

Eligible Green Projects include new and ongoing projects with disbursements up to 2 years prior to the Notes issuance and up to 24 months since launching date.

“Eligible Green Projects” include:

- Investments related to new rail lines and rail lines extensions.
- Investments related to maintenance, upgrades and energy efficiency of the rail system.



## 2.2 Eligible Green Projects

The “Eligible Green Projects” can be ordered in two categories:

### 1. Investments related to new rail lines and rail lines extensions.

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

### 2. Investments related to maintenance, upgrades and energy efficiency of the rail system.

This category includes projects aimed to improving the efficiency of the rail system and promoting sustainable transport.

The actions can be related to infrastructure and superstructure (signaling system, electrification of a railway line, capacity improvement...).

## 2.3 Selection Process

The Treasury and Accounting Department, in coordination with the Financial Planning and Budget Department<sup>1</sup> and the Environmental Management Department, will review the allocation of the projects annually.

Projects included in the categories indicated in section 2.1 above may be considered eligible for green bond proceeds allocation.

The aforementioned departments will complete the annual reporting, which will be published on ADIF-Alta Velocidad website (<http://www.adifaltavelocidad.es>).

## 2.4 Management of Proceeds

Until the total allocation of an amount equal to the net proceeds from the sales of the Notes to Eligible Green Projects, ADIF-Alta Velocidad will temporarily invest an amount equal to the unallocated net proceeds from the sales of the Notes in monetary funds managed following a responsible investment approach, in bank deposits, cash, or equivalents.

Payment of principal and interest of the Notes will be made from ADIF-Alta Velocidad general funds and will not be directly linked to the performance of the Eligible Green Projects.

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<sup>1</sup>ADIF-Alta Velocidad delegates the activities of the Treasury and Accounting Department, and the Financial Planning and Budget Department to ADIF. A resolution dated 28 January 2014 was passed by the Secretary of State for Infrastructure, Transport and Housing, who authorised publication of the resolutions of ADIF-AV's Board of Directors dated 17 January 2014, which permit ADIF-AV to delegate these activities to ADIF.

Auditors or any other third party appointed by ADIF-Alta Velocidad will verify the internal tracking method and the allocation of funds from the Green Bond proceeds to the Eligible Green Projects.

## 2.5 Reporting

Within one year of the issuance of ADIF-Alta Velocidad Green Bonds and until the maturity date of the Green Bonds issued, ADIF-Alta Velocidad will annually publish on its website (<http://www.adifaltavelocidad.es>) the information below:

- 1.- Annual updates on the amounts allocated to the Eligible Green Projects.
- 2.- Relevant expected impact metrics and where feasible actual impact metrics, related to the Eligible Green Projects.
- 3.- Annual report from auditors or any other third party appointed by ADIF-Alta Velocidad, that will verify the internal tracking method and the allocation of funds from the Green Bond proceeds to the Eligible Green Projects.

Some examples of relevant metrics are:

- **Investments related to new lines and rail line extensions.**
  - Estimated average time saving because of the project: minutes.
  - Modal shift: Number of passenger-Km. and/or tons-Km.
  - GHG emissions avoided: Ton. CO<sub>2</sub> equivalent.
  - Savings in external costs: Euro.
  
- **Investments related to maintenance, upgrades and energy efficiency of the ADIF-Alta Velocidad rail system.**
  - % Achievement of objectives of the ADIF-Alta Velocidad Master Plan for Energy Savings and Efficiency 2014-2020.
  - Reduction of energy consumption: GWh equivalents.
  - Reduction of CO<sub>2</sub> emissions: Kton. CO<sub>2</sub>.

## 3. EXTERNAL REVIEW: SECOND OPINION

ADIF-Alta Velocidad selected an expert consultant as a provider of Second Opinion, which will review this framework and will provide a Second Party Opinion.

The objective of the Second Opinion is to provide investors an independent assessment on the alignment of this framework with the GBP.

The Second Opinion will be provided by CICERO (Center for International Climate Research).