Gruppo FS

The Mobility Leader

GREEN BOND REPORT

related to the EMTN bond Series 10-17-18-19-20-21-22

December 2024

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Indice

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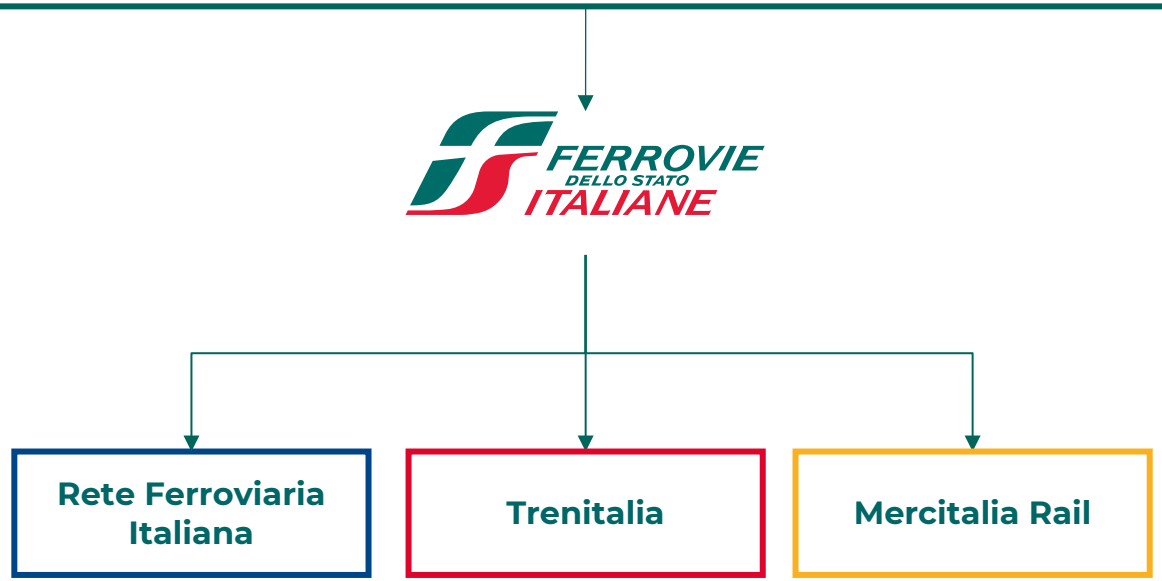
FS Group Overview and Sustainability

FS Group and Green Bonds

This reporting refers to all outstanding green bonds issued by FS Italiane before May 2023.

Trenitalia, RFI and **Mercitalia Rail** receive and invest the proceeds of the Green Bonds issued by FS Italiane according to the FS 2022 Green Bond Framework.

- EMTN Public Issuances (underwritten by both traditional and green/ESG Insitutional Investors)
- EMTN private placement (i.e. EIB).



A business model which fully integrates sustainability

FS Group vision is to become the company that enables a system of: **resilient infrastructures**, **sustainable mobility** and **integrated logistics**

Key ESG highlights 2023

PEOPLE
12,148 recruitments

COMMUNITIES
188,353 sq.m. total surface area under free loan for social uses

EMISSIONS
5.7 million tCO_2e avoided emissions[1]

WATER
- 4% consumption of water resources compared to 2022

WASTE
Over 96% of special waste sent for recovery

SUSTAINABLE PROCUREMENT
Over 88% of bids of tenders include environmental and social criteria

Sustainability performances

CDP	MOODY'S ESG SOLUTIONS	MSCI	MORNINGSTAR SUSTAINALYTICS	Sustainable Fitch
Climate change A-	Advanced	Average	ESG Low Risk	Rating 2 out of 5 (1 best, 5 worst)

Contribution to SDGs

1) The calculation of avoided emissions is based on a comparative assessment of emissions from public transport by rail and road, compared with the corresponding emissions that would have occurred with private car use, and between emissions from freight transport by rail, compared to the corresponding emissions that would have occurred with heavy commercial vehicle use. Sources: EIB Project Carbon Footprint Methodologies

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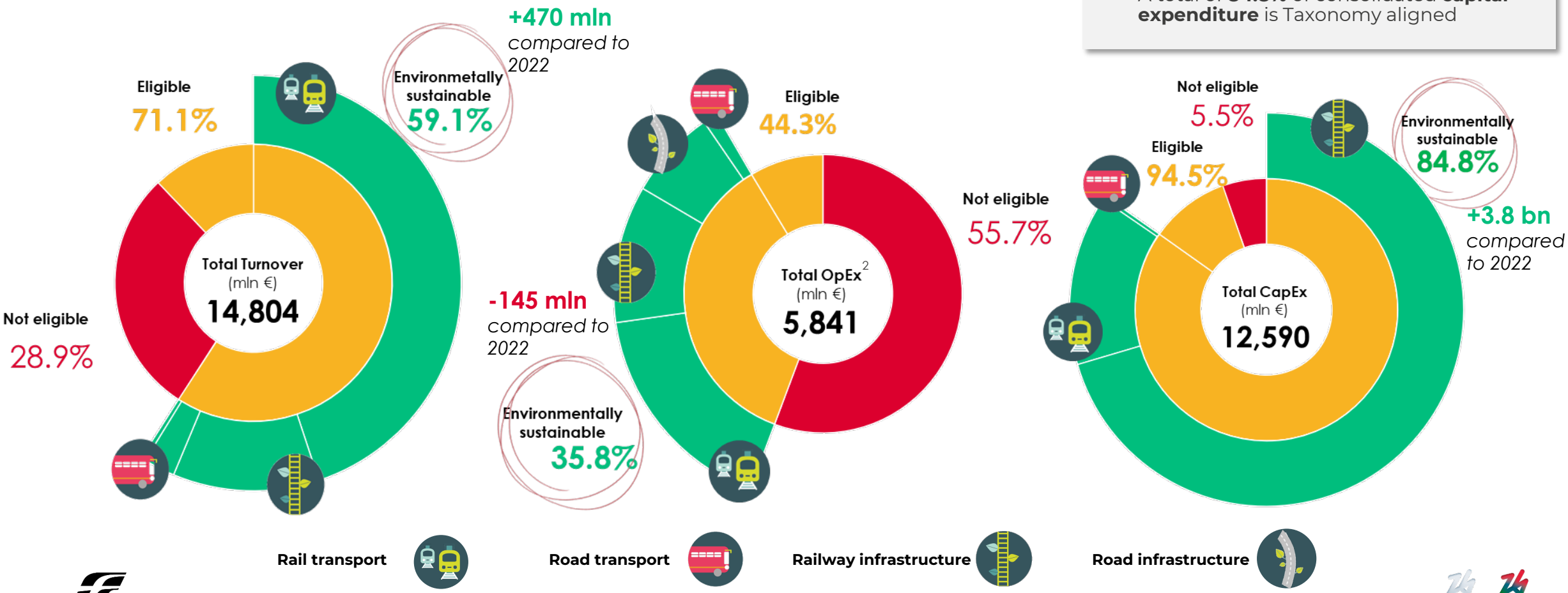
Reporting on the European Taxonomy

Turnover, Capex and Opex

In accordance with **EU Regulation 852/2020** (**EU Taxonomy**) below is summarized the performance of the Group with regard to the **shares of 2023 Turnover, Opex, and Capex[1] aligned to** the two objectives of **climate change mitigation and adaptation.**

- ✓ A total of **59.1%** of consolidated **turnover** is Taxonomy aligned
- ✓ A total of **35.8%** of consolidated **operating expenses** is Taxonomy aligned
- ✓ A total of **84.8%** of consolidated **capital expenditure** is Taxonomy aligned



[1]*Results refer to the share of turnover, operating expenses, and capital expenditures not related to intercompany activities.*

[2] *Total Opex as identified by the Delegated Regulations paragraphs 1.1.3.1. - 1.1.3.2*

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Green Bond Framework Summary

FS Green Bond Framework

First Green Bond Framework established in 2017. In 2022 FS has broadened the list of Eligible Green Projects.

Key figures of the GBF
- **SPO provider confirmed EU Taxonomy alingment (link)**
- **Compliance with ICMA Principles**
- **Eligible Green Projects covering the whole railway value chain**

Potential KPIs:
- **Energy efficiency**
- **Reducing CO_2 emissions**
- **Modal shift vs railway**

All the EGP are aligned with the EU Taxonomy categories

Eligible Green Projects

Look-back period: 2 years (*vs. 3 years of the previous update*)

Look-forward period: 2 years

Trenitalia electric passenger trains and maintenance of the electric rolling stock.

MIR electric locos and freight wagons and related maintenance

RFI electric HS infrastructure and maintenance of the railway lines.

Green Bond Framework – SDGs Mapping

- The FS Green Bond Framework addresses 3 of 17 **UN Sustainable Development Goals**.
- The mapping has been inspired by the **ICMA high-level mapping to SDGs** and existing practices of issuers of Green Bonds in the transportation sector.

SDG 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

SDG 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport

SDG 12.2: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

SDG 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

External Reviews

Best practice

In 2022 Sustainalytics provided a Second Party Opinion on the updated Green Bond Framework, certifying its alignment to the EU Taxonomy.

KPMG provided a **Third Party Opinion** on Green Bond Reports since 2018.

"Ferrovie demonstrates a commitment to sustainability through its sustainability strategy, which is underpinned by three pillars: (i) ***energy and emissions****, (ii)* ***sustainable mobility****, and (iii)* ***safety****"*

"Sustainalytics is of the opinion that Ferrovie has implemented ***adequate measures*** *and is* ***well-positioned to manage and mitigate environmental and social risks*** *commonly associated with the eligible categories."*

"Ferrovie dello Stato Italiane Green Bond Framework is aligned with the ***overall sustainability strategy*** *of the Group and that the green use of proceed category will contribute to the advancement of the UN* ***Sustainable Development Goals 9, 11 and 12****"*

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Allocation and Impact Reports

Green Bond Series 10-17-18-19-20-21-22

Reporting perimeter for a total amount of Euro 4.45 bn

Reporting activity for Series 23 is still ongoing and will be released one year after the issuance.

Series 10 Euro 700m

Green Senior Unsecured Notes 1.125% Due 2026

- Investments on both passenger and freight rollink stock among the Eligible Green Projects;
- 3.5x oversubscription with Eur 2.5 billion orders coming from 160 investors, of which around 50% from SRI investors;
- Final spread at m/s+128bps (equivalent to BTPs -16bps), fixing the final size at EUR 700m;
- First Italian bond CBI Certified.

Series 17 Euro 1,000m

Green Senior Unsecured Notes 0.375% Due 2028

- Investments in both local and high speed trains among the Eligible Green Projects;
- 1.8x oversubscription with Eur 1.8 billion orders coming from 90 investors, of which around 75% from SRI investors
- Final spread at the tighter end of the guidance, at m/s+60bps, fixing the final size at EUR 1 bn
- CBI Certified.

Series 18 Euro 350m

Green Senior Unsecured Floating Rate Notes Due 2028

- Investments in high speed trains among the Eligible Green Projects
- First Green Bond underwritten by EIB.
- CBI Certified.

Series 19 Euro 200m

Green Senior Unsecured Floating Rate Notes Due 2039

- Investments in high speed trains among the Eligible Green Projects
- Green Bond underwritten by EIB.

Series 20 Euro 1,100m

Green Senior Unsecured Notes 3.75% Due 2027

- Investments in new Trenitalia trains and relevant maintenance expenses and for the completion of the Turin-Milan-Naples high-speed network among the Eligible Green Projects;
- 1.9x oversubscription with Eur 2.1 billion orders coming from 150 investors, of which around 65% from ESG investors;
- Final spread at the tighter end of the guidance, at m/s+158.5bps, fixing the final size at EUR 1.1 bn.

Series 21-22 Euro 600m & Euro 500m

Green Senior Unsecured Dual Tranche issuances 4.125% Due 2029 & 4.50% Due 2033

- First FS Dual tranche issuance
- On the back of positive investors' interests (combined orders over EUR 2 bn, evenly split) reoffer spreads were directly set at MS+ 125 bps for the 6Y tranche and at MS+ 165 bps for the 10 Y tranche
- Investments in new Trenitalia trains and relevant maintenance expenses and for the completion of the Turin-Milan-Naples high-speed network among the Eligible Green Projects;

Allocation of the Proceeds

100% of the proceeds allocated at the issue date, via intercompany loan from FS, the issuer, to Trenitalia, RFI and Mercitalia Rail.

Issuance	Ultimate Beneficiary Company	Eligible Green Project	Funded Asset's Value (€/mln)	Unit of Asset Funded
10	Trenitalia	HIGH SPEED – FRECCIAROSSA 1000 TRAIN	117.60	3
		REGIONAL - POP AND ROCK TRAIN	463.77	53
	Mercitalia Rail	ELECTRIC LOCOMOTIVE E494	103.60	40
		WAGON SHIMMNS	14.30	140
17	Trenitalia	REGIONAL - POP AND ROCK TRAIN	834.58	108
		HIGH SPEED – FRECCIAROSSA 1000 TRAIN	166.79	5
18	Trenitalia	HIGH SPEED – FRECCIAROSSA 1000 TRAIN	351.36	10
19	Trenitalia	HIGH SPEED – FRECCIAROSSA 1000 TRAIN	200	6
20	Trenitalia	HIGH SPEED – FRECCIAROSSA 1000 TRAIN	173.4	5
		REGIONAL - POP AND ROCK TRAIN	158	17
		MAINTENANCE EXPENDITURES	568	421[(1)]
	RFI	INVESTMENTS IN THE HIGH-SPEED PROJECT TO-MI-NA	199.7	7.8 km equivalent length railway link HS Firenze[(2)]
21	Trenitalia	REGIONAL - POP AND ROCK TRAIN	93	11
		MAINTENANCE EXPENDITURES/REVAMPING	507.8	263[(1)]
22	Trenitalia	REGIONAL - POP AND ROCK TRAIN	255.7	31
	RFI	INVESTMENTS IN THE HIGH-SPEED PROJECT TO-MI-NA	102.19	7.8 km equivalent length railway link HS Firenze [(2)]
		OTHER HS/HC INVESTMENTS	43.72	NA[(3)]

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(1) Total equivalent trains maintained for the issuance 20 and 21. The criteria for estimating the number of equivalent trains per year is shown on slide 54

(2) Series 20 and 22 financed investments in the Firenze High-Speed Hub project, the total extension of which is 7.8 km, therefore unit of asset funded is the same for both series

(3) The different types of investments do not allow a common unit of assets funded.

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Impact reporting as of year end 2023 - environmental performance

«train vs. train» approach (1/2)

Issuance	Ultimate Beneficiary Company	Eligible Green Project	Unit of vehicle funded (equivalent)	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
10	Trenitalia	HS – FRECCIAROSSA 1000 TRAIN[2]	3[4]	6,352	9,815	7,805	-2,010	-20.5%
		REGIONAL - POP AND ROCK TRAIN[1]	53[4]	23,532	36,075	28,630	-7,445	-20.6%
	Mercitalia	ELECTRIC LOCOMOTIVE E494[3]	40[5]	2,643	28,708	27,872	-836	-2.91%
		WAGON SHIMMNS[3]	140[5]	26	226,0	218,3	-7,8	-3.46%
17	Trenitalia	REGIONAL - POP AND ROCK TRAIN[1]	108[6]	36,056	52,028	42,019	-10,008	-19.2%
		HS – FRECCIAROSSA 1000 TRAIN[9]	5[6]	11,470	0	0	-	-
18	Trenitalia	HS – FRECCIAROSSA 1000 TRAIN[9]	10[7]	22,941	0	0	-	-
19	Trenitalia	HS – FRECCIAROSSA 1000 TRAIN[2]	6[7]	12,704	16,119	12,818	-3,301	-20.5%

[1] Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock". The baseline for the calculation of energy saving and avoided GHG emissions is the market average for comparable trains in operation stated by the suppliers in the tender procurement process.

[2] Data related to the ETR1000 are actual as the fleet is full in operation. The baseline for the calculation of energy saving and avoided GHG emissions is the previous generation High-Speed train "ETR 500" with 9 coaches in the fleet of Trenitalia.

[3] Data related to the freight fleet are actual. The baseline for the calculation of energy saving and avoided GHG emissions are the last locomotive and wagon purchased, before these one, by Mercitalia Rail.

[4] Data refer to 5 years time period (2019-2023)

[5] Data refer to 4 years time period (2020-2023)

[6] Data refer to 3 years time period (2021-2023)

[7] Data refer to 2 years time period (2022-2023)

[9] Data are related only to energy saving due to the fact that the trains will be in service in Spain where traction energy comes 100% from renewable sources, therefore without CO2 emissions.

The Eligible Green Projects are considered **environmentally sustainable** in accordance with **EU Regulation 2020/852**, making a significant contribution to the objective of **climate change mitigation** as it complies with the criteria established for economic activity "6.1 Passenger interurban rail transport". For further details refer to the "Other ESG indicators – EU Taxonomy assessment" section.

Impact reporting as of year end 2023 - environmental performance

«train vs. train» approach (2/2)

Issuance	Ultimate Beneficiary Company	Eligible Green Project	Unit of vehicle funded (equivalent)	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
20	Trenitalia	HS – FRECCIAROSSA 1000 TRAIN[9]	5[7]	11,470	0	0	-	-
		REGIONAL - POP AND ROCK TRAIN[1]	17[7]	9,554	11,468	8,986	-2,482	-21.6%
21	Trenitalia	REGIONAL - POP AND ROCK TRAIN[1]	11[8]	3,876	5,322	4,283	-1,039	-19.5%
22	Trenitalia	REGIONAL - POP AND ROCK TRAIN[1]	31[8]	10,390	14,457	11,673	-2,784	-19.3%

[1] Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock". The baseline for the calculation of energy saving and avoided GHG emissions is the market average for comparable trains in operation stated by the suppliers in the tender procurement process.

[7] Data refer to 2 years time period (2022-2023)

[8] Data refer to 1 year time period (2023)

[9] Data are related only to energy saving due to the fact that the trains will be in service in Spain where traction energy comes 100% from renewable sources, therefore without CO2 emissions.

The Eligible Green Projects are considered **environmentally sustainable** in accordance with **EU Regulation 2020/852**, making a significant contribution to the objective of **climate change mitigation** as it complies with the criteria established for economic activity "6.1 Passenger interurban rail transport". For further details refer to the "Other ESG indicators – EU Taxonomy assessment" section.

Impact reporting as of year end 2023 - environmental performance

«train vs. car» approach

Issuance	Ultimate Beneficiary Company	Eligible Green Project	Unit of vehicle funded (equivalent)	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
20	Trenitalia	MAINTENANCE EXPENDITURES	421[(1)]	-	1,050,120	226,479	-823,641	78.4%
21	Trenitalia	MAINTENANCE EXPENDITURES	263[(1)]	-	656,013	145,915	-510,098	77.8%

[(1)] Total equivalent trains maintained. The criteria for estimating the number of equivalent trains per year is shown on slide 54

The Eligible Green Projects are considered **environmentally sustainable** in accordance with **EU Regulation 2020/852**, making a significant contribution to the objective of **climate change mitigation** as it complies with the criteria established for economic activity "6.1 Passenger interurban rail transport". For further details refer to the "Other ESG indicators – EU Taxonomy assessment" section.

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Impact reporting as of year end 2023 - environmental performance

«emission avoided» approach

Issuance	Ultimate Beneficary Company	Eligible Green Project	Funded Asset's Value (€/mn)	Avoided emissions from road transport (tCO_{2eq})	Emissions from train transport (tCO_{2eq})	Total GHG emissions avoided (tCO_{2eq})	GHG emissions avoided by Funded Asset's (tCO_{2eq})
20	RFI	INVESTMENTS IN THE HIGH-SPEED PROJECT TO-MI-NA	199.7	-686,877	+329,344	-357,533	24,878[1]
22	RFI	INVESTMENTS IN THE HIGH-SPEED PROJECT TO-MI-NA	102.19	-686,877	+329,344	-357,533	12,730[1]
22	RFI	OTHER HS/HC INVESTMENTS	43.72	NA	NA	NA	21,891[2]

[1] Punctual approach: refer to slide 56 for an explanation of the approach.
[2] Parametric approach: refer to slide 57 for an explanation of the approach.

The Eligible Green Projects are considered **environmentally sustainable** in accordance with **EU Regulation 2020/852**, making a significant contribution to the objective of **climate change mitigation** as it complies with the criteria established for economic activity "6.14 Infrastructure for rail transport". For further details refer to the "Other ESG indicators – EU Taxonomy assessment" section.

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Third Party Opinion

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Independent auditors' report on the Green Bond Report

To the Board of Directors of
Ferrovie dello Stato Italiane S.p.A.

We have been engaged to perform a limited assurance engagement on the information about the allocation of the proceeds of the Green Bonds - Series 10, 17, 18, 19, 20, 21 and 22 (the "Allocation of the Proceeds") issued by Ferrovie dello Stato Italiane S.p.A. ("the Company"), presented in the section "Allocation of the Proceeds", and the related impact metrics ("Impact metrics"), presented in the section "Impact reporting as of year end 2023 - environmental performance", included in the Green Bond Report – December of Ferrovie dello Stato Italiane S.p.A . (the "Report"). This Report has been prepared in accordance with the Green Bond Framework published by the Company in June 2022 (the "Framework"), as described in the "Note of Calculation Methodology " section of the Report.

Our limited assurance engagement does not cover the information regarding the alignment with the Regulation (EU) 2020/852.

Responsibilities of the Company's Directors for the Report

The Directors are responsible for the preparation of the Report in accordance with the Framework, as described in the "Note of Calculation Methodology" section of the Report.

The Directors are also responsible for such internal control as they determine is necessary to enable the preparation of a Report that is free from material misstatement, whether due to fraud or error. It also includes identifying the content of the Report, selecting and applying policies, and making judgments and estimates that are reasonable in the circumstances.

Auditors' independence and Quality Management

We have complied with the independence and other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA Code) issued by the International Ethics Standards Board for Accountants, 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 Management 1 (ISQM Italia 1) and, accordingly, maintains a system of quality management including policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Auditors' responsibility

Our responsibility is to express a conclusion, based on the procedures performed, about the compliance of the information about the Allocation of the Proceeds and the related Impact metrics presented in the "Allocation of the Proceeds" and "Impact reporting as of year end 2023 - environmental performance" sections of the Report with the Framework, as described in the "Note of Calculation Methodology" section of the Report.

We carried out our work in accordance with the criteria established by "International Standard on Assurance Engagements 3000 (Revised) - Assurance Engagements other than Audits or Reviews of Historical Financial Information" ("ISAE 3000 Revised"), issued by the International Auditing and Assurance Standards Board applicable to limited assurance engagements. This standard requires that we plan and perform the engagement to obtain limited assurance about whether the Report is free from material misstatement. A limited assurance engagement is less in scope than a reasonable assurance engagement carried out in accordance with ISAE 3000 Revised, and consequently does not enable us to obtain assurance that we would become aware of all significant matters and events that might be identified in a reasonable assurance engagement.

Third Party Opinion

KPMG

Ferrovie dello Stato Italiane S.p.A.
Independent auditors' report
5 December 2024

The procedures we performed on the information about the allocation of the Proceeds and the related Impact metrics presented in the "Allocation of the Proceeds" and "Impact reporting as of year end 2023 - environmental performance" sections of the Report are based on our professional judgement and include inquiries, primarily of the Company's personnel responsible for the preparation of the information presented in the Report, documental analyses, recalculations and other evidence gathering procedures, as appropriate.

Specifically, we carried out the following main procedures:

- Reviewing the second party opinion;
- Interviews with personnel of the Company involved in the preparation of the Report;
- Assessing, through interviews with personnel of the Company, the procedures followed to collect, aggregate and report on the allocation of the proceeds and the related impact metrics presented in the sections "Allocation of the Proceeds" and "Impact reporting as of year end 2023 - environmental performance" of the Report;
- Regarding the information contained in the sections "Allocation of the Proceeds" and "Impact reporting as of year end 2023 - environmental performance" of the Report, with reference to quantitative data, we have conducted both limited documentary evidence and analytical procedures, in order to collect information about the process and procedures that support the collection, elaboration, processing and transmission of the data.

Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the information about the allocation of the proceeds and the related Impact metrics presented in the "Allocation of the Proceeds" and "Impact reporting as of year end 2023 - environmental performance" sections of the Green Bond Report – December 2024 of Ferrovie dello Stato Italiane S.p.A, are not prepared, in all material respects, in accordance with the Framework as described in the "Note of Calculation Methodology" section of the Report.

Our conclusion on the "Allocation of the Proceeds" and "Impact reporting as of year end 2023 - environmental performance" sections, included in the Report, do not refer to the information regarding the alignment with the Regulation (EU) 2020/852.

Other matters

This report has been prepared solely for the purposes described in the first paragraph and, accordingly, it may not be suitable for other purposes.

Rome, 5 December 2024

KPMG S.p.A.

Gabriele de Gennaro
Director of Audit

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Substantial contribution to	Taxonomy activity	EU Technical Screening Criteria	Alignment with Technical Screening Criteria
REGIONAL - POP AND ROCK TRAIN **HIGH SPEED – FRECCIAROSSA 1000 TRAIN** **MAINTENANCE EXPENSES/ REVAMPING**	**Climate change mitigation**	**Passenger interurban rail transport**	The activity complies with one of the following criteria: (a) the trains and passenger coaches have zero direct (tailpipe) CO_2 emissions; (b) the trains and passenger coaches have zero direct (tailpipe) CO_2 emission when operated on a track with necessary infrastructure, and use a conventional engine where such infrastructure is not available (bimode).	Eligible green projects fulfill criteria a). Regional trains “Pop & Rock” and High speed trains “ETR 1000” are electric and they have zero direct (tailpipe) CO2 emissions. As for cyclic maintenance and revamping, only electric trains/locos and coaches in electric loco composition were considered (*).

** Diesel-powered loco/trains were excluded, and coaches were curtailed by a correction factor to account for potential use in diesel composition. The criteria for estimating equivalent trains is given in the slide 54.*

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Substantial contribution to	Taxonomy activity	EU Technical Screening Criteria	Alignment with Technical Screening Criteria
HIGH SPEED PROJECT TO-MI-NA	**Climate change mitigation**	**Infrastructure for rail transport**	The activity complies with one of the following criteria: a) the infrastructure is either: i. electrified trackside infrastructure and associated subsystems; ii. new and existing trackside infrastructure and associated subsystems where there is a plan for electrification, or where the infrastructure will be fit for use by zero tailpipe CO_2 emission trains within 10 years from the beginning of the activity; iii. until 2030, existing trackside infrastructure and associated subsystems that are not part of the TEN-T network and its indicative extensions to third countries, nor any defined network of major rail lines; b) the infrastructure and installations are dedicated to transhipping freight between the modes c) infrastructure and installations are dedicated to the transfer of passengers from rail to rail or from other modes to rail d) digital tools enable an increase in efficiency, capacity or energy saving. 2. The infrastructure is not dedicated to the transport or storage of fossil fuels.	The eligible green project is related to electrified trackside infrastructure and associated subsystems, thus fulfilling criteria (a) i.

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
REGIONAL - POP AND ROCK TRAIN **HIGH SPEED – FRECCIAROSSA 1000 TRAIN** **MAINTENANCE EXPENSES/ REVAMPING**	**Passenger interurban rail transport**	**Climate change adaptation**	Climate risk and vulnerability assessment	Ferrovie dello Stato has a risk management approach that covers climate change adaptation. Consistently with the best practices (e.g. EU Climate ADAPT – The Adaptation Support Tool), FS Group indeed considers adaptation as a way to minimize climate change risk. Ferrovie dello Stato is a TCFD (Task Force on Climate-Related Financial Disclosures) supporter since May 2021, and its climate change risk management process aims to identify and evaluate climate hazards and the related adaptation measures according to best practices. In 2023, to identify the share of turnover, operating expenses, and capital expenditures aligned with the objectives of the EU Taxonomy Regulation, the Group provided companies with a tool for climate analysis and vulnerability assessment of main assets to identify the related adaptation measures in the so-called Adaptation Catalogue. The tool allows to i) identify the prevailing asset types (i.e., rolling stock, vehicles, buildings, ships, etc.); ii) identify the climate hazards that can potentially affect the assets (in line with Appendix A of the Technical Annex of Delegated Regulation EU 2021/2139); iii) evaluate the degree of vulnerability of the prevailing asset to the climate hazard; iv) identify physical and non-physical solutions (adaptation solutions) that help reduce the effects of the hazards that weight on the specific economic activity.
HIGH SPEED PROJECT TO-MI-NA	**Infrastructure for rail transport**			

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
HIGH SPEED PROJECT TO-MI-NA	**Infrastructure for rail transport**	**Sustainable use of water resources**	Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies. Where an Environmental Impact Assessment is carried out in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed.	During the development of projects for infrastructure, particularly those subject to Environmental Impact Assessment (EIA), in-depth studies are conducted to assess the possible interactions of the work with the surrounding environment, with particular attention to the protection of surface and groundwater during construction and operation. Detailed analyses of the hydraulic and hydrogeological characteristics of the area involved are carried out to assess potential interferences during construction and operation, defining mitigation or improvement solutions. During the construction phase, contractors implement an Environmental Management System in accordance with UN EN ISO 14001 to manage Significant Environmental Aspects during construction and establish operational procedures for environmental surveillance in accordance with regulatory obligations. RFI's management of water withdrawals follows environmental, national, community and regional regulations, ensuring compliance with legislative requirements. In many cases, especially for public users, drinking water comes from the public aqueduct. RFI is committed to monitoring the water network it owns to maintain parameter values at the point of delivery. Periodically, potability analyses are carried out to monitor water quality, and if regulatory limits are exceeded, sanitization activities are implemented on the entire network through appropriate treatments.

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
REGIONAL - POP AND ROCK TRAIN **HIGH SPEED – FRECCIAROSSA 1000 TRAIN** **MAINTENANCE EXPENSES/ REVAMPING**	**Passenger interurban rail transport**	**Transition to a circular economy**	Measures are in place to manage waste in accordance with the waste hierarchy, in particular during maintenance	The Group's main subsidiaries are ISO 14001:2015 Environment Management System (EMS) certified. The guidelines of EMS are applied to all operations including, procurement of goods and services, waste management, water management, preparation of train and crew, and shunting and maintenance of trains, wagons and locomotives. The Group's waste management policy is included in the EMS and the generated waste is managed in accordance with the waste management hierarchy while ensuring compliance with national and European regulations. The trains financed through green bonds have respectively the following high recyclability and recoverability rate: ETR 1000 over 94%; Pop over 96%, Rock over 97%. The ETR1000 and the Rock passenger trains obtained the Environmental Product Declaration (EPD) which shows that the Frecciarossa 1000 emits only 28 grams of CO_2 per passenger per kilometer and the Rock emits 5.7 grams of CO_2 per passenger per kilometer.

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
HIGH SPEED PROJECT TO-MI-NA	**Infrastructure for rail transport**	**Transition to a circular economy**	Operators limit waste generation in processes related to construction and demolition and take into account best available techniques. At least 70 % (by weight) of the non-hazardous construction and demolition waste generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol. Operators use selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling. For manufacturing of constituents assess and adopts techniques that support: (a) reuse and use of secondary raw materials; (b) design for high durability, recyclability, easy disassembly and adaptability; (c) waste management that prioritises recycling over disposal; (d) traceability of substances of concern.	As part of the construction of new rail infrastructure, the main waste materials are excavated soil and rocks. RFI adopts environmental principles aimed at encouraging reuse of these materials rather than disposal. Whenever possible, waste materials are reused in ongoing projects or at off-site sites, while those that cannot be reused are managed as waste and disposed of in licensed facilities. RFI's procedures have been modified to meet EU principles and promote high standards in the European construction context. The Civil Works Design Manual defines procedures to maximize the reuse of excavated soil and rock, reducing waste generation and promoting the circular economy. By-products that are not reused in railroad works can be used for environmental rehabilitation in agreement with local authorities. Only if the materials do not meet environmental requirements are they managed as waste, with a focus on recovery rather than disposal. The Procurement Agreements include specific clauses to promote circular economy principles. For waste management, the Contractor must define operating methods consistent with regulatory requirements and submit periodic reports. In rail infrastructure maintenance activities, the main wastes are copper, steel, sleepers, and crushed stone. Removed materials are evaluated for reuse, and unsuitable materials are managed as waste, with preference given to recovery. Between 2019 and 2021, more than 90 percent of the special waste produced by RFI was sent for recovery, as reported in the Sustainability Report. RFI has implemented a UNI ISO 14001-compliant Environmental Management System to manage environmental aspects and continuously improve environmental performance.

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
REGIONAL - POP AND ROCK TRAIN **HIGH SPEED – FRECCIAROSSA 1000 TRAIN** **MAINTENANCE EXPENSES/ REVAMPING**	**Passenger interurban rail transport**	**Pollution prevention and control**	Locomotive propulsion engines (RLL) and railcar propulsion engines (RLR) meet the emission limits in Annex II of Regulation (EU) 2016/1628 of the European Parliament and of the Council.	Regional trains “Pop & Rock” and High speed trains “ETR 1000” are electric and they have zero direct (tailpipe) CO2 emissions. As for cyclic maintenance and revamping, only electric trains/locos and coaches in electric loco composition were considered*.

** Diesel-powered loco/trains were excluded, and coaches were curtailed by a correction factor to account for potential use in diesel composition. The criteria for estimating equivalent trains is given in the slide 54.*

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
HIGH SPEED PROJECT TO-MI-NA	**Infrastructure for rail transport**	**Pollution prevention and control**	Where appropriate, given the sensitivity of the area affected, in particular in terms of the size of population affected, noise and vibrations from use of infrastructure are mitigated by introducing open trenches, wall barriers, or other measures and they comply with Directive 2002/49/EC of the European Parliament and of the Council. Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.	RFI is aware of major air pollution factors resulting from its activities, including air emissions, noise, and vibration. These impacts occur during the construction of new works, at maintenance sites, and in railroad operating areas. At the design stage of new infrastructure, RFI conducts targeted studies to prevent and reduce pollution by adopting mitigation solutions. To manage noise and vibration, the Construction Site Environmental Project (PAC) and the Environmental Monitoring Project (PMA) are prepared, which identify solutions and verify the effectiveness of the measures taken. With regard to railway operations, RFI conducts noise simulations at the request of relevant agencies to identify and mitigate impacts on sensitive receptors. RFI promotes sustainability through a Design Manual, which guides the design of new works and maintenance interventions, considering environmental aspects and specific authorizations. Contractually, contractors are required to adopt an Environmental Management System in accordance with UN EN ISO 14001, defining operating methods to manage materials, hazardous substances and waste to prevent pollution of environmental matrices. All necessary environmental permits are acquired, and operational and mitigation actions, such as wetting of tracks and installation of dust and noise barriers, are implemented to manage noise and air emissions.

Other ESG indicators – EU Taxonomy assessment

Eligible Green Project	Taxonomy activity	Environmental objectives	DNSH Criteria	Alignment with DNSH Criteria
HIGH SPEED PROJECT TO-MI-NA	**Infrastructure for rail transport**	**Protection and restoration of biodiversity and ecosystems**	An Environmental Impact Assessment (EIA) or screening has been completed in accordance with Directive 2011/92/EU. Where an EIA has been carried out, the required mitigation and compensation measures for protecting the environment are implemented. For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment, where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented.	With reference to the protection and restoration of biodiversity and ecosystems, RFI has a special procedure "Management of interventions in protected natural areas and/or subject to landscape constraints" that applies to cases in which an organizational structure of the company operates as Principal, as Technical Subject or as executor in investment or maintenance projects that may result in interference, even indirectly, with protected areas and/or on areas or assets subject to constraints. In the event that the implementation of the interventions affects territories or assets subject to protection regimes related to the presence of protected areas and/or landscape constraints, the company preliminarily assesses the feasibility of the interventions or the conditions to which they are subjected in order to acquire the appropriate authorizations required by the regulations in force. Where an Environmental Impact Assessment has been carried out, the necessary mitigation and compensation measures for environmental protection are implemented. For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and major biodiversity areas, and other protected areas), an appropriate assessment is conducted, where applicable, and, based on its conclusions, the necessary mitigation measures are implemented.

Other ESG indicators – EU Taxonomy

Eligible Green Project	Minimum safeguards
ALL	FS Italiane promotes the protection of human rights for its employees, customers, citizens, suppliers and business partners, helping create a responsible supply chain and operating in accordance with the United Nations' Universal Declaration of Human Rights and the fundamental conventions of the International Labour Organization. The principles on which the Group operates include respect for human rights and the commitment to contribute to the creation of a responsible supply chain, also established in the Code of Ethics (which guides the Group in its relationships with stakeholders). Furthermore, the Group promotes open and inclusive employment relationships and rejects any type of discrimination or harm against people, prevents any form of illegal labour and endorses policies aimed at the psychological and physical well-being of personnel. Since 2017, the Group has joined the UN's Global Compact ("GC") network.

7 Green Bonds for a total Eur 5.05 bn issued until May 2023

NEW REGIONAL ELECTRIC TRAINS "POP" AND "ROCK"	NEW HIGH SPEED ELECTRIC TRAINS "ETR1000"	NEW ELECTRIC LOCOMOTIVES AND WAGONS	MAINTENANCE & REVAMPING EXPENSES	HIGH SPEED/HIGH CAPACITY INVESTMENTS
				
€1.805 million	€1.009 million	€118 million	€1.076 million	€346 million
220 trains	29 trains	40 locomotives 140 wagons	684 equivalent trains	NA**
73,120 **tCO$_2$ saved**	13,887 **tCO$_2$ saved**	2,789 **tCO$_2$ saved**	1,943,906 **tCO$_2$ saved**	59,499 **tCO$_2$ saved**

..... in the period 2019-2023 thanks to the Series 10, 17,18, 19, 20, 21 and 22

Furthermore, the **Bond issuance Series 7***** allocated **€549.64 million** and **€49.78 million** to fund respectively **17** High Speed Electric Trains "ETR1000" and **7** Regional Electric Trains "POP" and "ROCK". Total **13,491 tCO$_2$ saved*** in 2018 thanks to the Series 7.

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** Compared to previous train models (Pop, Rock and Etr 1000)*
*** The different types of investments do not allow a common unit of assets funded.*
**** Expired in 2023.*

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Allocation & impact report details

Green Bond Series 10-17-18-19-20-21-22

Series 10: allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS, the issuer, to Trenitalia and Mercitalia Rail

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Trains' value (€/mln)**	**Unit of vehicle funded (equivalent)**
1. Investments in public passenger transport rolling stock renewal		
New Electric Multiple Unit (EMU) Trains For Regional Passenger Transport: "Pop" and "Rock"	463.77	53
New High Speed Trains "Frecciarossa1000"	117.60	3
2. Investments in freight transport rolling stock renewal		
New Electric Locomotives For Freight Transport	103.6	40
New Wagons For Freight Transport	14.3	140
TOTAL NET PROCEEDS	**699,3 100% financing of new projects**	

Series 10 impact reporting as of year end 2023 - environmental performance

Passenger transport «train vs. train» approach (2019-2023)

Project Category	Eligible Green Project	Year	Unit of Vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
Investments in public passenger transport rolling stock renewal	REGIONAL - POP AND ROCK TRAIN (1)	2019		24,944	38,729	30,837	-7,892	-20.40%
		2020		18,257	26,979	21,203	-5,776	-21.41%
		2021	53	24,114	36,722	29,092	-7,630	-20.78%
		2022		24,222	37,058	29,394	-7,664	-20.68%
		2023		23,532	36,075	28,630	-7,445	-20.64%
		Total	**53**	**115,069**	**175,563**	**139,156**	**-36,407**	**-20.74%**
	HIGH SPEED – FRECCIA ROSSA 1000 TRAIN (2)	2019		6,035	9,324	7,415	-1,909	-20.50%
		2020		2,771	4,281	3,404	-876	-20.48%
		2021	3	3,184	4,919	3,912	-1,007	-20.48%
		2022		5,722	8,841	7,031	-1,810	-20.48%
		2023		6,352	9,815	7,805	-2,010	-20.48%
		Total	**3**	**24,064**	**37,179**	**29,567**	**-7,612**	**-20.47%**

- Data refer to 5 years time period (2019-2023)

(1) Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock". The baseline for the calculation of energy saving and avoided GHG emissions is the market average for comparable trains in operation stated by the suppliers in the tender procurement process.

(2) Data related to the ETR1000 are actual as the fleet is full in operation. The baseline for the calculation of energy saving and avoided GHG emissions is the previous generation High-Speed train "ETR 500" with 9 coaches in the fleet of Trenitalia.

Series 10 impact reporting as of year end 2023 - environmental performance

Freight transport «train vs. train» approach (2020-2023)

Project Category	Eligible Green Project	Year	Unit of Vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
Investments in freight transport rolling stock renewal	ELECTRIC LOCOMOTIVE E494 [1]	2020	40	994	10,797	10,482	-314	-2.91%
		2021		2,580	28,030	27,213	-816	-2.91%
		2022		2,475	26,881	26,098	-783	-2.91%
		2023		2,643	28,708	27,872	-836	-2.91%
		Total	**40**	**8,692**	**94,416**	**91,665**	**-2,749**	**-2.91%**
	WAGON SHIMMNS	2020	140	32	417.0	406.9	-10.1	-2.44%
		2021		37	475.0	463.4	-11.6	-2.44%
		2022		33	429.6	419.2	-10.4	-2.44%
		2023		26	226.0	218.3	-7.8	-3.46%
		Total	**140**	**128**	**1,547.6**	**1,507.8**	**-39.9**	**-2.58%**

[1] Data related to the freight fleet are actual. The baseline for the calculation of energy saving and avoided GHG emissions are the last locomotive and wagon purchased, before these one, by Mercitalia Rail.

Series 17 allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS to Trenitalia

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Trains' value (€/mln)**	**Unit of vehicle funded (equivalent)**
1. New Electric Multiple Unit (EMU) Trains For Regional Passenger Transport: "Pop" and "Rock"	834.58	108
2. New High Speed Trains "Frecciarossa1000"[1]	166.79	5
TOTAL	**1,001.37**	**113**
	100% financing allocated	

[1]Trains operating in both Italian and Spanish high speed services.

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Series 17 impact reporting as of year end 2023 - environmental performance
«train vs. train» approach

Project Category	Eligible Green Project	Year	Unit of Vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
Investments in public passenger transport rolling stock renewal	REGIONAL - POP AND ROCK TRAIN [1]	2021		27,309	38,942	31,362	-7,581	-19.5%
		2022	108	36,948	53,124	42,868	-10,256	-19.3%
		2023		36,056	52,028	42,019	-10,008	-19.24%
		Total	**108**	**100,313**	**144,095**	**116,249**	**-27,845**	**-19.32%**
	HIGH SPEED – FRECCIAROSSA 1000 TRAIN [2]	2021		9,447[3]	0	0	-	-
		2022	5	1,332[4]	0	0	-	-
		2023		11,470	0	0	-	-
		Total	**5**	**22,249**	**0**	**0**	**-**	**-**

[1] Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock".

[2] Data are related only to energy saving due to the fact that the trains will be in service in Spain where traction energy comes 100% from renewable sources, therefore without CO_2 emissions.

[3] Data estimated considering fully operational services.

[4] Trains started running commercial services from 25/11/22. Data includes the preliminary activities carried out in the first half of the year.

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Series 18 allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS to Trenitalia

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Trains' value (€/mln)**	**Unit of vehicle funded (equivalent)**
New High Speed Trains "Frecciarossa1000"[1]	350.64	10
	100% financing allocated	**10**

[1]Trains operating in Spanish high speed services.

Series 18 impact reporting as of year end 2023 - environmental performance

«train vs. train» approach

Project Category	Eligible Green Project	Year	Unit of Vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
Investments in public passenger transport rolling stock renewal	HS – FRECCIAROSSA 1000 TRAIN[1]	2022	10	2,665[2]	0	0	-	-
		2023		22,941	0	0	-	-
		Total	10	25,606	0	0	-	-

[1]Data are related only to energy saving due to the fact that the trains will be in service in Spain where traction energy comes 100% from renewable sources, therefore without CO_2 emissions.

[2]Trains started running commercial services from 25/11/22. Data includes the preliminary activities carried out in the first half of the year.

Series 19 allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS to Trenitalia

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Funded Asset's Value (€/mln)**	**Unit of vehicle funded (equivalent)**
New High Speed Trains “Frecciarossa1000”	200	6
	100% financing allocated	

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Series 19 impact reporting as of year end 2023 - environmental performance

«train vs. train» approach

Project Category	Eligible Green Project	Year	Unit of Vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO2	Total GHG emissions tCO2	Total GHG emissions avoided tCO2	Total GHG emissions avoided %
Investments in public passenger transport rolling stock renewal	HS – FRECCIAROSSA 1000 TRAIN[1]	2022	6	11,444	14,520	11,546	2,973	-20.48%
		2023		12,704	16,119	12,818	3,301	-20.48%
		Total	**6**	**24,148**	**30,638**	**24,364**	**6,274**	**-20.48%**

[1] Data related to the ETR1000 (in service in Italy) are actual as the fleet is full in operation. The baseline for the calculation of energy saving and avoided GHG emissions is the previous generation High-Speed train "ETR 500" with 9 coaches in the fleet of Trenitalia.

Series 20 allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS to Trenitalia and RFI

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Funded Asset's Value (€/mln)**	**Unit of asset funded (equivalent)**
1. New Electric Multiple Unit (EMU) Trains For Regional Passenger Transport: "Pop" and "Rock"	158	2 Pop, 15 Rock
2. New High Speed Trains "Frecciarossa1000"	173.4	5
3. Maintenance expenses	568	421[1]
4. Investments in the high-speed project TO-MI-NA	199.7	7.8 km[2] equivalent length railway link HS Firenze
TOTAL	1,099.1 **100% financing allocated**	

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[1] Total equivalent trains maintained for 2020 and 2021. The criteria for estimating the number of equivalent trains per year is shown on slide 54

[2] Series 20 and 22 financed investments in the Firenze High-Speed Hub project, the total extension of which is 7.8 km, therefore unit of asset funded is the same for both series

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Series 20 impact reporting as of year end 2023 - environmental performance

«train vs. train» approach

Uimate Beneficiary Company	Eligible Green Project	Year	Unit of vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO_2	Total GHG emissions t tCO_2	Total GHG emissions avoided tCO_2	Total GHG emissions avoided %
Trenitalia	HIGH SPEED – FRECCIAROSSA 1000 TRAIN[1]	2022	5	1,332	0	0	0	0
		2023		11,470	0	0	0	0
		Total	**5**	**12,802**	**0**	**0**	**0**	**0**
	REGIONAL - POP AND ROCK TRAIN[2]	2022	17	9,862	11,831	9,269	-2,562	-21.7%
		2023		9,554	11,468	8,986	-2,482	-21.64%
		Total	**17**	**19,416**	**23,299**	**18,255**	**-5,044**	**-21.65%**

[1] Data are related only to energy saving due to the fact that the trains will be in service in Spain where traction energy comes 100% from renewable sources, therefore without CO2 emissions.

[2] Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock". The baseline for the calculation of energy saving and avoided GHG emissions is the market average for comparable trains in operation stated by the suppliers in the tender procurement process.

Series 20 impact reporting as of year end 2023 - environmental performance

«train vs. car» approach

Ultimate Beneficiary Company	Eligible Green Project	Year	Unit of vehicle funded (equivalent)	Energy Saving MWh	Baseline GHG emissions tCO_2	Total GHG emissions tCO_2	Total GHG emissions avoided tCO_2	Total GHG emissions avoided %
Trenitalia	MAINTENANCE EXPENSES	2022	421 [1]	n.a	830,281	220,114	- 610,166	-73.5%
		2023		n.a	1,050,120	226,479	-823,641	-78.43%
		Total	**421 [1]**	**n.a**	**1,880,401**	**446,593**	**-1,433,807**	**-76.25%**

(1) Total equivalent trains maintained for 2020 and 2021. The criteria for estimating the number of equivalent trains per year is shown on slide 54

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Series 20 impact reporting as of year end 2023 - environmental performance
«emission avoided» approach

Ultimate Beneficiary Company	Eligible Green Project	Year	Total Investement (A) (€/mn)	Funded Asset's Value (€/mn) (B)	Avoided emissions from road transport (tCO_{2eq})	Emissions from train transport (t.CO2eq)	Total GHG emissions avoided (tCO_{2eq}) (C)	GHG emissions avoided by Funded Asset's (tCO_{2eq}) (B/A)*C
RFI	INVESTMENTS IN THE HIGH-SPEED PROJECT TO-MI-NA	2022	2,870	199.7	- 686,877	+329,344	- 357,533	24,878[1]
		2023						
		Total	**2,870**	**199.7**	**- 686,877**	**+329,344**	**- 357,533**	**24,878**[1]

[1] Punctual approach: refer to slide 56 for an explanation of the approach

Series 21 allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS to Trenitalia and RFI

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Funded Asset's Value (€/mln)**	**Unit of asset funded (equivalent)**
1. New Electric Multiple Unit (EMU) Trains For Regional Passenger Transport: "Pop" and "Rock"	93	6 Pop, 5 Rock
2. Maintenance/Revamping expenses	507,8	263[1]
TOTAL	**600,8 100% financing allocated**	

[1] Total equivalent trains maintained for 2020 and 2021. The criteria for estimating the number of equivalent trains per year is shown on slide 54

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Series 21 impact reporting as of year end 2023 - environmental performance

«train vs. train» approach

Uimate Beneficiary Company	Eligible Green Project	Year	Unit of vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO_2	Total GHG emissions t tCO_2	Total GHG emissions avoided tCO_2	Total GHG emissions avoided %
Trenitalia	**REGIONAL - POP AND ROCK TRAIN**[1]	**2023**	11	3,876	5,322	4,283	-1,039	-19.52%
		Total	**11**	**3,876**	**5,322**	**4,283**	**-1,039**	**-19.52%**

[1] Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock". The baseline for the calculation of energy saving and avoided GHG emissions is the market average for comparable trains in operation stated by the suppliers in the tender procurement process.

Series 21 impact reporting as of year end 2023 - environmental performance

«train vs. car» approach

Ultimate Beneficiary Company	Eligible Green Project	Year	Unit of vehicle funded (equivalent)	Energy Saving MWh	Baseline GHG emissions tCO_2	Total GHG emissions tCO_2	Total GHG emissions avoided tCO_2	Total GHG emissions avoided %
Trenitalia	MAINTENANCE EXPENSES	2023	263 (1)	n.a	656,013	145,915	-510,098	-77.76%
		Total	**263 (1)**	**n.a**	**656,013**	**145,915**	**-510,098**	**-77.76%**

(1) Total equivalent trains maintained for 2021 and 2022. The criteria for estimating the number of equivalent trains per year is shown on slide 54

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Series 22 allocation of the Proceeds

100% proceeds allocated at the issue date, via intercompany loan from FS to Trenitalia and RFI

PROCEEDS ALLOCATION		
ELIGIBLE GREEN PROJECT	**Funded Asset's Value (€/mln)**	**Unit of asset funded (equivalent)**
1. New Electric Multiple Unit (EMU) Trains For Regional Passenger Transport: "Pop" and "Rock"	255.7	18 Pop, 13 Rock
2. Investments in the high-speed project TO-MI-NA	102.19	7.8 km[1] equivalent length railway link HS Firenze
3. Other HS/HC investments	43.7	NA[2]
TOTAL	**401,6 80% financing allocated[3]**	

[1] Series 20 and 22 financed investments in the Firenze High-Speed Hub project, the total extension of which is 7.8 km, therefore unit of asset funded is the same for both series

[2] The different types of investments do not allow a common unit of assets funded

[3] Allocation on RFI is still ongoing and will be completed before the end of the look forward period according to FS GBF. The unused proceeds from the Green Bond Series 22 are placed into Ferrovie's treasury accounts.

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Series 22 impact reporting as of year end 2023 - environmental performance

«train vs. train» approach

Uimate Beneficiary Company	Eligible Green Project	Year	Unit of vehicle funded	Energy Saving MWh	Baseline GHG emissions tCO_2	Total GHG emissions t tCO_2	Total GHG emissions avoided tCO_2	Total GHG emissions avoided %
Trenitalia	REGIONAL - POP AND ROCK TRAIN[1]	2023	31	10,390	14,457	11,673	-2,784	-19.26%
		Total	**31**	**10,390**	**14,457**	**11,673**	**-2,784**	**-19.26%**

[1] Data related to the POP and ROCK are estimates based on the values stated by the suppliers in the tender procurement process according to the European technical specification TS 50591 "Specification and verification of energy consumption for railway rolling stock". The baseline for the calculation of energy saving and avoided GHG emissions is the market average for comparable trains in operation stated by the suppliers in the tender procurement process.

Series 22 impact reporting as of year end 2023 - environmental performance
«emission avoided» approach

Ultimate Beneficiary Company	Eligible Green Project	Year	Total Investement (A) (€/mn)	Funded Asset's Value (€/mn) (B)	Avoided emissions from road transport (tCO_{2eq})	Emissions from train transport (t.CO2eq)	Total GHG emissions avoided (tCO_{2eq}) (C)	GHG emissions avoided by Funded Asset's (tCO_{2eq})
RFI	INVESTMENTS IN THE HIGH-SPEED PROJECT TO-MI-NA	2023	2,870	102.19	-686,877	+329,344	-357,533	12,730[1]
	OTHER HS/HC INVESTMENTS	2023	NA	43.72	NA	NA	NA	21,891[2]
	ALL INVESTMENTS	Total	**2,870**	**145.91**	**- 686,877**	**+329,344**	**- 357,533**	**34,621**

[1] Punctual approach: (B/A)*C. Refer to slide 56 for an explanation of the approach.
[2] Parametric approach: Carbon efficiency parameter (Tonns/Euro) x B. Refer to slide 57 for an explanation of the approach.

Note on Calculation Methodology

Estimated avoided emissions thanks to the purchase of new trains and the maintenance expenses/revamping

	Purchase of new trains «train vs. train» approach	Cyclic Maintenance/Revamping «train vs. car» approach
Baseline	Train V S Market average *Comparison with similar trains (i.e. trains offered in bidding process)*	Train V S Car *Comparison with road transport (benefit calculated in terms of modal shift car-to-rail)*
Calculation algorithm	$\left(\frac{kWh}{trkm}_{baseline} - \frac{kWh}{trkm}_{train}\right)_{serie} * f_{conv_{serie}} * trkm_{avg_{year\ N}} * n°train_{serie}$ (Specific saving; Production factor; Green Bond Scope)	$\left(\frac{CO_2}{paxkm}_{car} - \frac{CO_2}{paxkm}_{train}\right)_{year\ N} * \frac{paxkm_{train_{year\ N}}}{train_{year\ N}} * train_{eq_{serie}}$ (Specific saving; Production factor; Green Bond Scope (3))

f_{conv} *is the CO_2 emission factor of the first year of reporting, related to the Italian electricity production mix as calculated by ISPRA for the year N-2 (i.e. for the serie 20 reported for the first time in 2022, the value of year 2020 is used)*

CO_2 car *is the ratio of car's average emission per passenger-km in the first year of reporting (161,9 gCO2/km in 2022) (1) and the pax/car average load factor (1,5 in 2022) (2)*
CO_2 train *is the product between train's average specific consumption and the CO_2 emission factor related to the electricity production mix*

(1): Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) - The database of average emission factors of road transport in Italy
(2) EcoPassenger - Environmental Methodology and Data Update 2016
(3) The criteria for estimating the number of Green Bond Scope's equivalent trains is shown on slide 54

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Note on Calculation Methodology

Maintenance expenses/revamping - Green Bond Scope's Equivalent Train Definition

Blocked composition trains **Locomotives + coaches***

$$train_{eq\ serie} = train_{comp.blocked} + (loco_{el} + coach_{el} + coach_{prom} * f_r)/comp_{avrg}$$

- $train_{comp.blocked}$ = trains with blocked composition (e.g. ETR1000, TAF, etc.)
- $loco_{el}$ = electric-powered locomotives
- $coach_{el}$ = coaches used exclusively in electric loco composition
- $coach_{prom}$ = mixed-use coaches used in both electric and diesel loco compositions
- f_r = corrective reduction factor that takes into account the mixed use of coaches
- $comp_{avrg}$ = average composition of trains composed of loco + coaches per Business

** The different types of locos and coaches are considered as a homogeneous whole. For precautionary purposes, the number of equivalent trains will be rounded down.*

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Note on Calculation Methodology

Purchase of new trains - GHG EMISSION

GHG emissions of the EGPs (tCO_2[1])

=

[Annual average consumption (MWh) of the relevant train] X [CO_2 emission factor (gCO_2/kWh)]/1000

Series	CO2 emission factor (gCO_2/kWh)
10	316.4
17	277.6 (EMU), 0 (ETR1000 Spain)
18	0 (ETR1000 Spain)
19, 20	259.8
21, 22	267.9

- The **Annual Avarage Consumption** is actual or estimate depending on the deployment status of project [2]
- The **CO_2 Emission Factor** is the CO_2 emission factor **related to the Italian electricity production mix as calculated by ISPRA**[3]

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(1): Location-based approach. CO_2 emission are included, other gas (CH_4 e N_2O) are not included (less than 1%)
(2): Refer to the previous slide for detail on each project
(3): Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) Sure! Here is the translation: "Emission factors for the production and consumption of electricity in Italy (update to 2021 and preliminary estimates for 2022)“ (for the year N-2)

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Note on Calculation Methodology

Emissions avoided thanks to infrastructure investments that lead the modal shift to rail transport

Punctual Approach

Where cost-benefit analysis of an investment project is available, the valuation of externalities is done through a **punctual approach (direct or indirect).**

Emissions avoided during the operation of a railway project are generally calculated using the **differential approach** determined by comparing the "project" scenario involving the construction of the project and the "reference" scenario not involving the investment. The calculation is performed along a **30-year operating phase.**

Through specific transportation study, it was possible to estimate the **number of vehicles.km** diverted from road to rail mode and the related CO_2 saved.

This value is netted by the CO_2 emitted for the production of electricity needed to run the extra number of trains that result from the investment. On the right side, the tons of CO_2 avoided are reported.

-357,533 tCO_2e EMISSION AVOIDED

CO_2 emissions avoided during the operation of the railway work thanks to the modal shift to rail transport

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Note on Calculation Methodology

Emissions avoided thanks to infrastructure investments that lead the modal shift to rail transport

Parametric Approach

In case a cost-benefit analysis of an investment project is not available, the estimation of CO_2eq tons can be done through a **parametric approach**. A basket of HS/HC projects with characteristics similar to those of the High Speed TO-MI-NA was selected and a **carbon efficiency parameter** was calculated.

Carbon efficiency parameter (Tonns/Euro)

x

Amount financed (Euro)

CO_2 emissions avoided during the operation of the railway work calculated by applying a carbon efficiency parameter (expressed in tons of CO_2 per euro) to the share of the project financed by the green bond.

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