Ferrovie dello Stato Italiane Group

ANNEX
COMPANY HIGHLIGHTS

CONTENTS

Company highlights

Ferrovie dello Stato Italiane

OUR APPROACH

Ferrovie dello Stato Italiane considers the protection of the environment into the Group's strategies and activities, implementing a project aimed at reducing the transport sector's carbon footprint, maximising the environmental advantages of collective transport and favouring more sustainable vehicles and infrastructure. At the same time, in its role as a holding company, it intends to promote the rational use of natural resources throughout the supply chain of the Group's companies, with an eye to the complete life cycle of the products and services managed. In order to pursue this objective, it is essential to establish, carry out and monitor objectives which require the rational use of resources, the prevention and reduction of environmental risks, research into energy efficiency, and the promotion of renewable energy sources.

The Environmental Management Policy and System guide the processes and actions towards continuous improvement, spreading awareness of environmental matters and actively supporting the monitoring of environmental impacts.

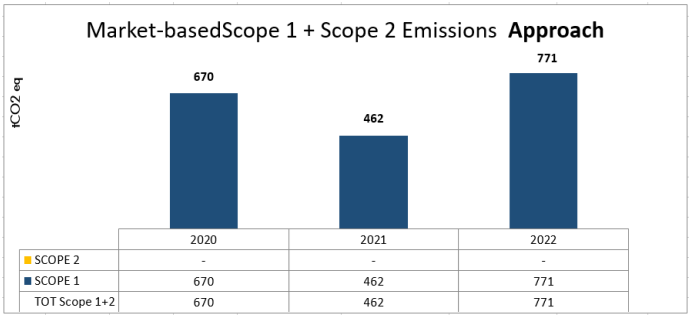
Final energy consumption

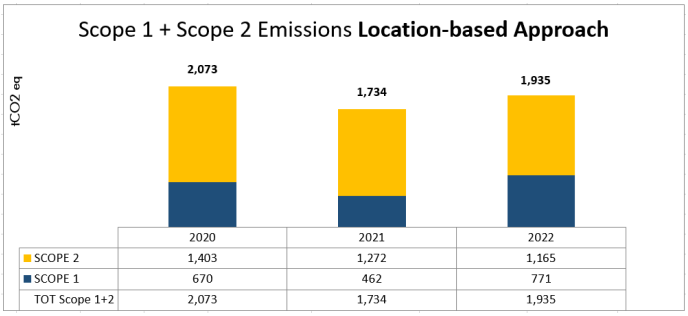
		2022	2021	2020
Electricity	MWh	4,448	4,545	4,686
with guarantee of origin or self-produced solar energy	%	100%	100%	100%
Natural gas	Sm^3	385,858	232,645	335,549
Total consumption	**GJ**	**29,244**	**24,339**	**28,378**

Comments on the trend

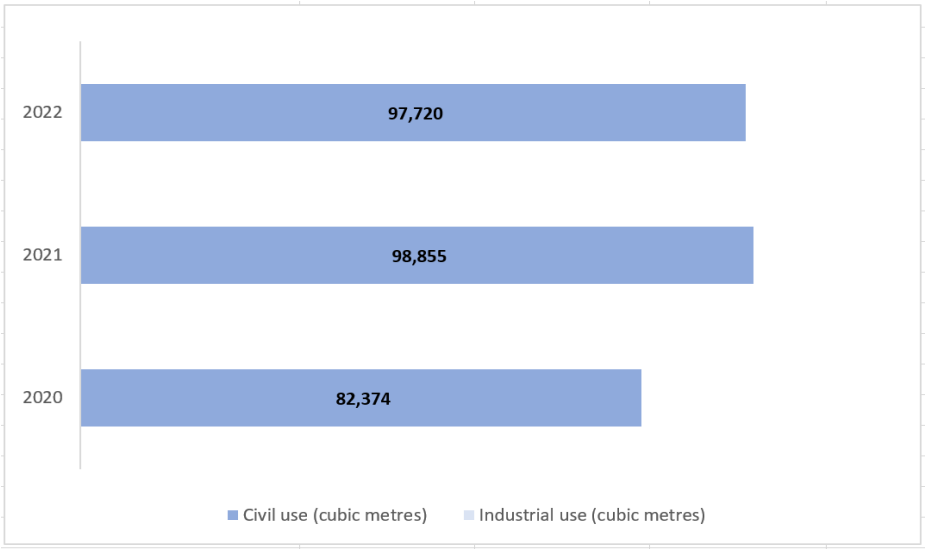
Overall energy consumption was significantly reduced in 2021 due to lower consumption of natural gas for heating, as a result of the use of smart working due to the health emergency, which started in March 2020.
In 2022, consumption realigned to the values recorded in 2020 as, against a significant increase in natural gas consumption (+66% compared to 2021), there was a slight but gradual reduction in electricity consumption.

Total CO_2 eq





Water

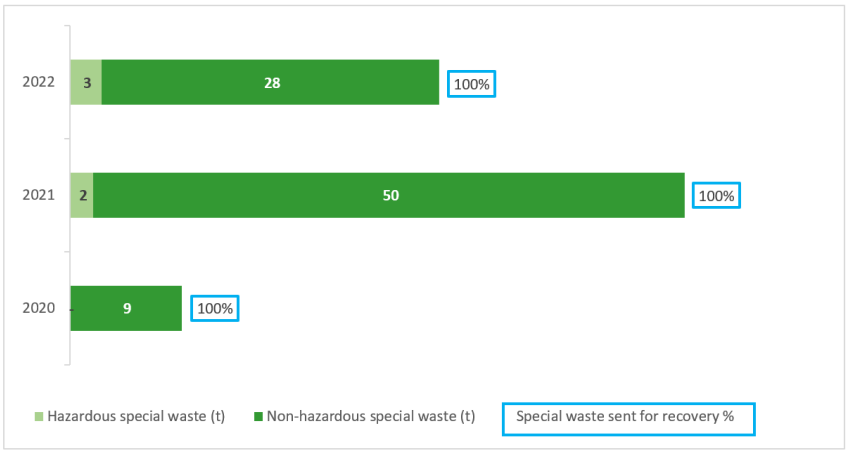


Comments on the trend

The values in the graph refer to water abstractions recorded at Rome headquarters, which also houses employees of other Group's companies who use water for sanitary purposes.

Compared to 2021, the figures show a slight decrease due to the reduction of sanitisation activities that were necessary during the emergency pandemic period, which ended at the end of June 2022.

Waste

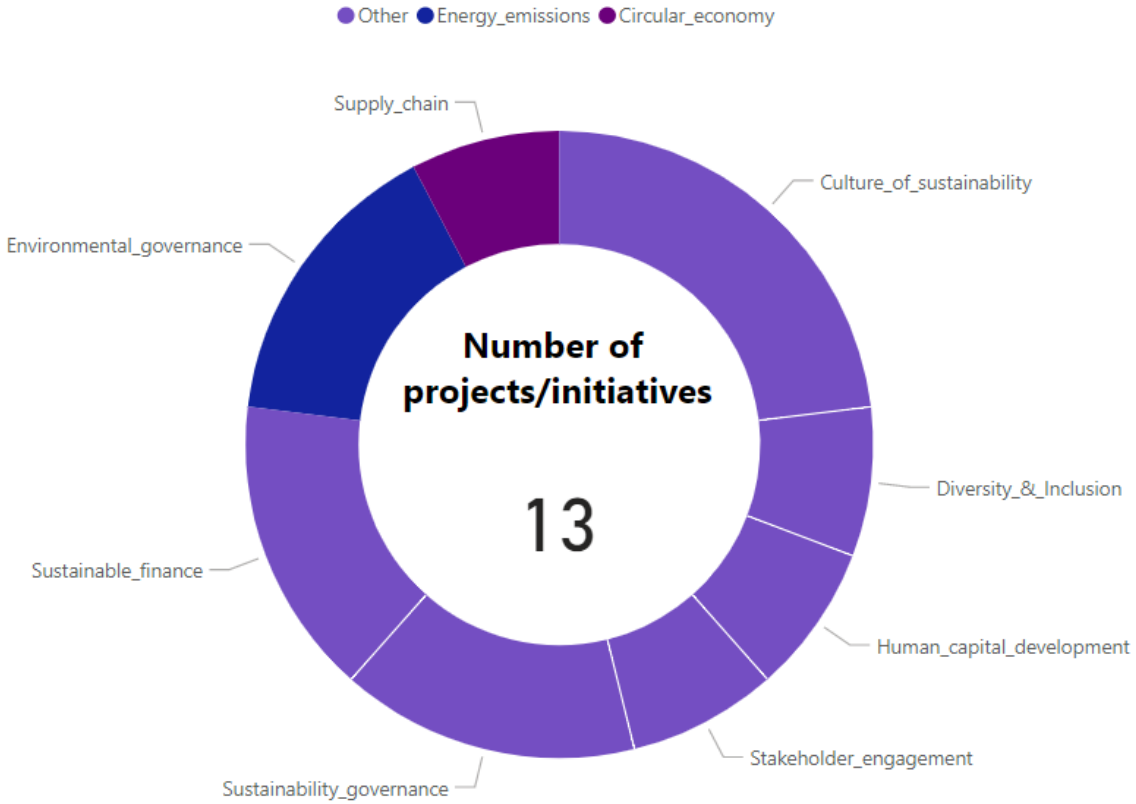


Comments on the trend

The values shown in the graph refer to special waste, divided into hazardous and non-hazardous, produced by administrative activities at the Villa Patrizi site in Rome.

Production, which consists mainly of non-hazardous special waste (e.g. computer equipment, furniture, paper and cardboard), decreased sharply by about 43% compared to 2021. The decrease is due to the reduction in activities related to the rearrangement of workplaces and the disposal of paper archives. All the special waste produced was sent for recovery.

Projects and initiatives



Below are the main projects/initiatives:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
Launch of the *Sustainable Supply Chain Management* Project , developed on a customised platform for Gruppo FS, aimed at monitoring and improving the ESG profile of economic operators and suppliers of all companies, also through desk and on-site audit activities	In progress	2026	Other
Induction path, aimed at the Board of Directors and management of major Group's companies, to strengthen knowledge and commitment on ESG issues and the strategic importance of sustainability. The training programme involving Boards, aimed at fostering a business model that ensures the balance of ESG components, consists of 2 sessions: - Entry-Level Session, which provides basic knowledge on the main ESG topics; - Deep Dive Session, extensively looking at specific topics to promote the integration of ESG principles into the corporate strategy. The first Entry Level Session involved over 20 Boards[1], and will continue into the second half of 2023, also involving management. The training content for managers aims to disseminate the essential principles of sustainability and provide a systematic view of the Group and the broader external context. Both courses involve both leading specialists on the national and/or international scene and experts in the field	In progress	2024	Other
Planet FS awareness and training course, based on a digital gamification platform with engaging challenges and interactive moments. More than 400 employees of Gruppo FS were involved and had the opportunity to learn more about various sustainability issues and the Group's commitment to creating value for the community	Completed	2022	Other
Recipes for sustainability: in-house webinars featuring three experts on climate change, urban regeneration, diversity and social inclusion	Completed	2022	Other

[1] Starting in December 2022, the Boards of Anas, Bluferries, Blujet, Busitalia Campania, Busitalia Sita Nord, Busitalia Veneto, Fercredit, Ferrovie Sud-Est, Ferservizi, Fondazione FS, FS SpA, FS Sistemi Urbani, Metropark, FSTechnology, Grandi Stazioni Rail, Italcertifer, Italferr, Infrarail, Mercitalia Intermodal, Mercitalia Logistics, Mercitalia Rail, Mercitalia Shunting&Terminal, RFI, Terminali Italia and Trenitalia took part in the Entry Level Session.

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
Digital tool for Gruppo FS to support the new stakeholder engagement and materiality approach. It allows stakeholders' needs and expectations to be intercepted, in real time, through the planning of listening sessions, the reporting of needs and the consolidation of results that emerge from the engagement process. The wealth of information produced is capitalised and facilitates the identification of initiatives and areas in which to create shared value	In progress	2024	Other
Updating the composition of the Sustainability Committee to adapt it to the cluster structure. The following roles were therefore involved: Managing Director and General Director of Trenitalia SpA (Passenger Unit); Managing Director and General Director of RFI SpA (Infrastructure Unit); Managing Director and General Director of Mercitalia Logistics SpA (Logistics Unit); Managing Director of FS Sistemi Urbani Srl (Urban Unit).	Completed	2022	Other
First edition of Sustainability Day FS, an event that brought together the Group's top management and managers with stakeholders: representatives from academia, institutions and civil society organisations. The event, hosted as part of the Festival of Sustainable Development promoted by Asvis, made it possible to gather insights, observations and reflections useful for integrating sustainability into the business model and addressing rapidly changing scenarios	Completed	2022	Other
Definition and inclusion of sustainability criteria within the performance appraisal process of staff subject to incentive policies, consolidating the procedure started in 2022	In progress	2023	Other
Start of the process to certify the decarbonisation targets of Gruppo FS Italiane, in line with the Paris Agreements, through the signing of the Science Based Target Initiative commitment letter	In progress	2024	Energy and emissions
The company achieved level "A-" in the Leadership bracket of the assessment on climate issues management by the Carbon Disclosure Project (CDP)	Completed	2022	Energy and emissions

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
The Group has taken out a committed credit facility, in which the interest and commitment fees are revised linked to targets related to the four sustainability-linked performance indicators that measure the Group's ESG performance in various areas, all of which were also achieved in 2022	In progress	2024	Other

Trenitalia

OUR APPROACH

Trenitalia is committed to becoming a driver of sustainable development in the mobility sector, aiming at continuous improvement of its ESG (Environment, Social, Governance) profile. Furthermore, it considers safety of railway operations, quality of services provided, environmental protection, energy efficiency, and safeguarding health and safety of its workers to be fundamental elements of its strategy.

With a view to continuous improvement on sustainability issues, in 2022 Trenitalia decided to obtain the first measurement and recognition of Ecovadis, an internationally recognised rating that assesses ESG performance related to respect for the environment, human and labour rights, ethics and sustainable procurement: within the rail transport sector, Trenitalia scored in the top 9% of the companies globally.

Trenitalia has formalised its own *Operation Safety, Quality, Environment, Occupational Health and Safety Policy*, which defines the general orientation to meet its mission and create a stable competitive advantage that, by leveraging the prerogatives of rail transport such as safety and respect for the environment, encourages sustainable mobility. To boost its effectiveness in this respect, Trenitalia has also adopted an Integrated Safety and Quality Management System (SIGSQ), that conforms to the requirements of ISO 45001, ISO 14001, ISO 9001 and the Biosafety Trust Certification standard document.

With respect to energy efficiency, Trenitalia has been carrying out - for seven years now - an extensive energy diagnostic campaign at its industrial plants. These activities are aimed at progressively improving the energy performance of maintenance operations, including through major investments in the installation of LED lighting systems, energy upgrading of compressed air and heating production and distribution systems, and the production of energy from renewable sources (e.g. photovoltaic systems, solar thermal, etc.).

In compliance with European regulations on green procurement, Trenitalia includes environmental and social sustainability requirements in its purchasing procedures in order to improve the impact of its supply chain. For example, with regard to the purchase of new rolling stock, Trenitalia is committing itself - as it did in the last tenders for the more than 600 regional electric and diesel trains - to put in specific clauses allowing significant progress of energy efficiency for vehicles and circular economy aspects of their composing materials.

The awareness-raising in-house campaign *Ogni gesto fa la differenza (Every action makes a difference)*, which had already started in 2021, went on in 2022. It is an initiative to raise staff awareness on sustainability issues, with a focus on: circular economy, energy saving and sustainable mobility.

Lastly, starting in December 2022, Trenitalia has launched the communication campaign *I nostri gesti insieme fanno la differenza (Our actions together make a difference)* on board the trains, with the aim of making customers aware of all those little tricks in daily life with which everyone can contribute to safeguarding environment. In addition, short information bits provide an insight into the sustainability features of the trains.

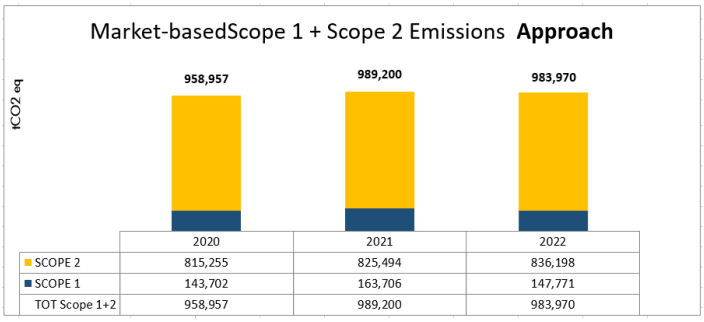
Final energy consumption

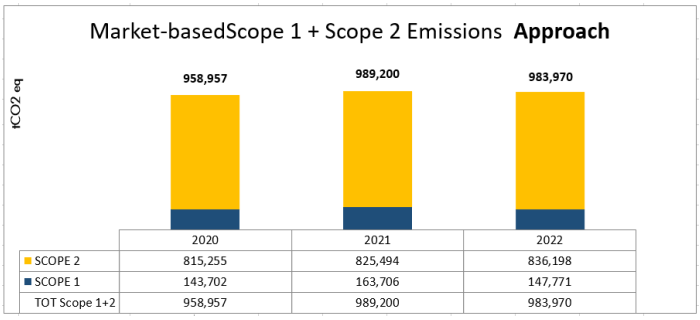
		2022	2021	2020
Electricity for railway traction	MWh	3,193,772	2,950,263	2,722,075
Electricity for other uses	MWh	76,087	79,518	73,673
with guarantee of origin or self-produced solar energy		*100%*	*100%*	*100%*
self-produced and consumed solar energy	*MWh*	5,775	4,076	2,322
Diesel	l	41,425,986	43,185,866	38,483,358
Natural gas	Sm^3	13,027,503	18,406,144	15,300,319
Other consumption	GJ	180	109	108
Total consumption	**GJ**	**13,720,114**	**13,103,942**	**11,984,608**

Comments on the trend

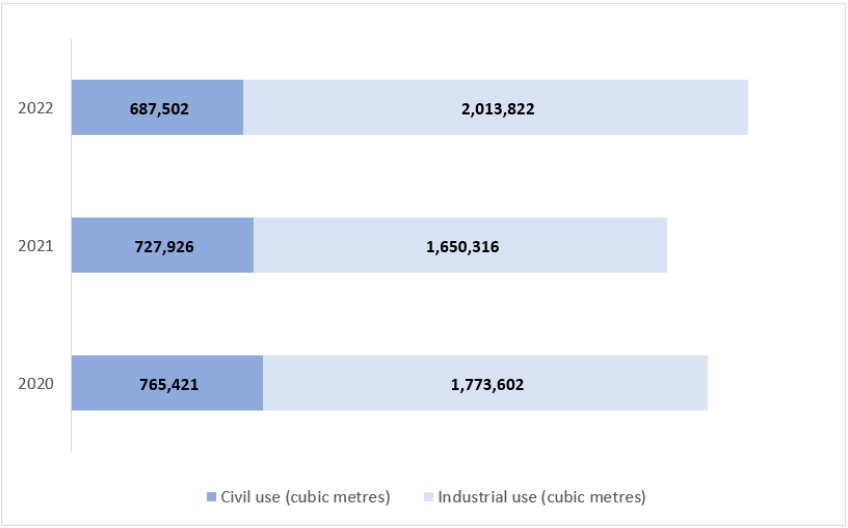
In 2022, energy consumption shows an increase of about 4.7% compared to 2021, mainly due to an increase in the consumption of electricity, partially offset by a reduction in the use of fossil fuels (mainly diesel and natural gas). In 2022, the resumption of traffic after the acute phase of the health emergency in 2020 has been going on, resulting in an increase in the amount of electricity used for railway traction. There was also a reduction in electricity consumption for other uses of around 4.3% compared to 2021, due to a wiser management of the energy carrier, also in relation to the increase in energy prices. It should also be noted that the energy produced and consumed by photovoltaic plants increased by 42%, thanks to some plants (e.g. Verona and Florence) started-up on 2021 becoming fully operational in 2022. With regard to natural gas, there was a significant reduction in consumption, of about 29%, due to a series of managerial and technical initiatives, aimed at responding to the global energy crisis (examples include, on the management side, reduction of the set point temperature of the plants, reduction of activation hours and optimisation of operations, while, on the technological side, the installation of heat pumps and the refurbishment of some out-of-date plants). Diesel consumption, which is mainly used for rail traction, is slightly reduced (by around 4%) compared to 2021, mainly due to a reduction in the circulation of diesel trains.

Total CO_2





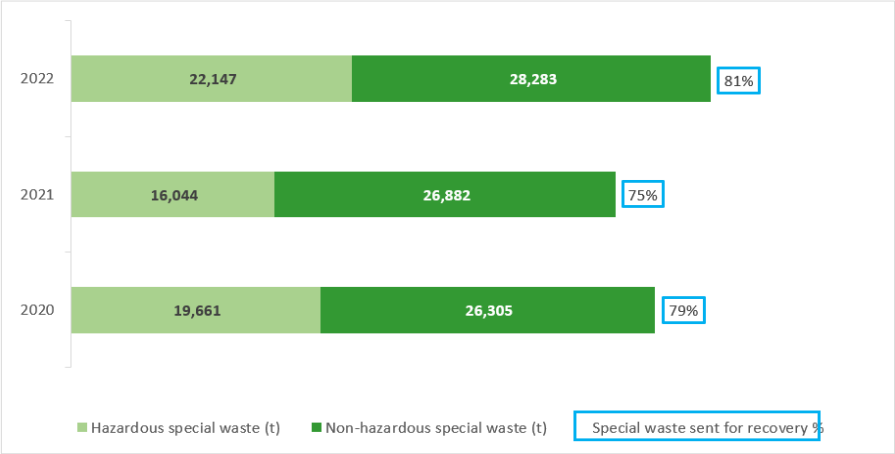
Water



Comments on the trend

The trend in the consumption of water for industrial use, which increased compared to 2021, is due to the performance of extraordinary work on trains at some maintenance plants and the rise in carriage maintenance cleaning activities carried out at the Milano Martesana plant, which led to greater consumption both for washing cars and for refuelling carriages.

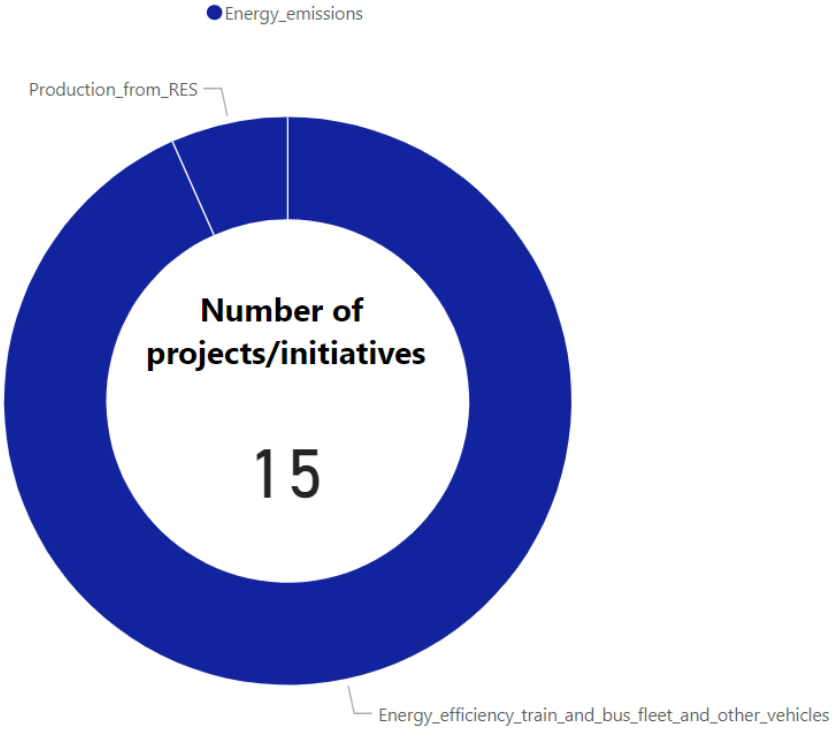
Waste



Comments on the trend

The overall upward trend compared to 2021 can be mainly due to the increase in special hazardous waste sent for recovery and to the scrapping of obsolete cars and locomotives, as a result of the renewal plan for the fleet used in regional transport.

Projects and initiatives



Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Reducing the industrial water consumption of plants	In progress	2022	Circular economy	-1.08 litres/hour worked per year (-20% to 2032)
Reducing the environmental impact associated with the production of waste from industrial processes	In progress	2022	Circular economy	+2.27% p.a. (+25% to 2032) Increase, in percentage points, in the share of waste from industrial processing sent for recovery
Experimental conversion of Blues trains from trimodal (diesel, electricity and batteries) to bimodal (electricity and batteries)	In progress	dec-24	Energy and emissions	
Introduction of batteries on 25 E464 engines for Intercity trains	In progress	dec-25	Energy and emissions	Planned outfitting of 25 E464 engines for IC
Energy efficiency on the regional fleet through the installation of new LED lighting and air conditioning systems	In progress	dec-25	Energy and emissions	Total means to be modified: 1,575
Energy efficiency on the Intercity (IC) fleet through the installation of new LED lighting and air conditioning systems	In progress	2025 (LED); 2023 (Conditioning)	Energy and emissions	LED system: 992 carriages to be modified in total; Conditioning: 330 carriages to be modified in total
Energy efficiency in the ETR 500 train fleet through the installation of new air conditioning in the driver's cabs	In progress	2024	Energy and emissions	118 driver compartments of the ETR500 fleet
Increasing the production and optimising the use of energy produced from Renewable Energy Sources (RES) for company energy uses other than railway traction with the aim of increasing the share of self-consumed energy produced from Renewable Energy Sources (RES)	In progress	2032	Energy and emissions	-5,000 tCO_2 /year from 2032
Initiating the phase-out of fossil fuels at industrial sites in order to reduce the use of natural gas and zero the use of diesel fuel	In progress	2031	Energy and emissions	- 7.000 tCO_2

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Project to convert E464 trains into battery-powered trains for regional transport	Under evaluation	2026	Energy and emissions	The equipping of 20 E464 locomotives is being evaluated
IC fleet renewal (Purchase of new hybrid bimodal trains, new electric trains, new carriages and engines)	In progress	2028	Energy and emissions	Reduction of direct CO2 emissions of the IC fleet of approx. 5.000 tCO2/year starting from 2028 (2019 baseline)
Renewal of the HS fleet through the purchase of new ETR 1000s	In progress	2031	Energy and emissions	delivery of 46 other ETR 1000 trains is planned
Renewal of the regional fleet through the purchase of new Pop and Rock, Blues trains, EMU (Electric Multiple Units) at 200km/h, Medium Capacity at 160km/h, Jazz, carriages)	In progress	2030	Energy and emissions	Reduction of CO_2 emissions of the regional fleet of approx. 19,000 tCO_2 (direct) and approx. 35,000 tCO2 (indirect) starting from 2030 against a 14% increase in electricity production (2019 baseline)

Trenitalia subsidiaries

Gruppo Netinera

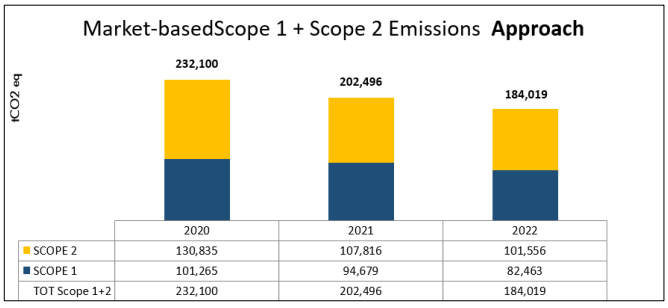
Final energy consumption

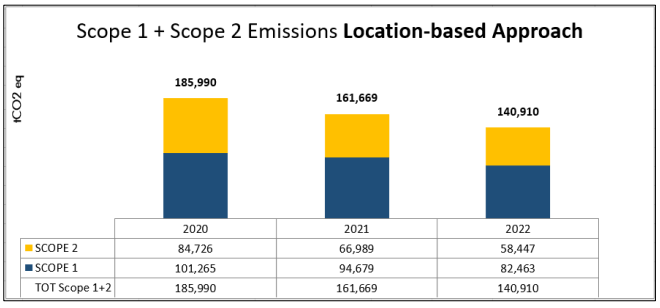
		2022	2021	2020
Electricity for railway traction	MWh	165,424	168,570	173,089
Electricity for other uses	MWh	5,994	7,280	6,459
with guarantee of origin or self-produced solar energy	%	0%	0%	0%
Diesel	l	27,641,048	31,680,032	34,137,692
Natural gas	Sm^3	611,946	765,170	599,286
Other consumption	GJ	4,063	4,205	2,278
Total consumption	**GJ**	**1,644,081**	**1,811,627**	**1,906,323**

Comments on the trend

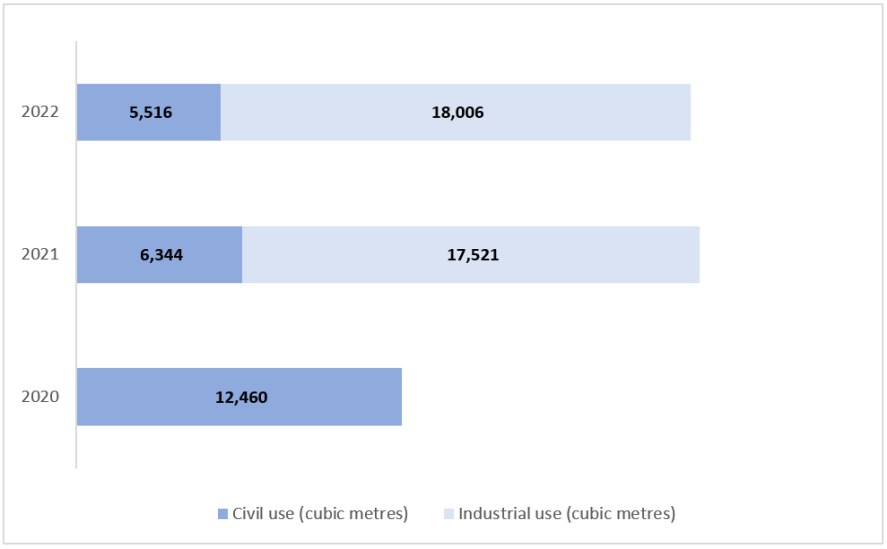
Overall energy consumption decreased over the three-year period, mainly due to a reduction in rail and road traction activities. In 2022, electricity consumption for rail traction confirmed its slight decrease, while there is a reduction of about 19% in electricity consumption for other uses, as a result of the implementation of energy-saving measures. Diesel consumption also drops by around 9% compared to 2021, mainly due to the reduction of the share for rail traction and public road transport, as a result of the reduction in kilometres travelled and transport contracts managed (e.g. the exit of the company Autobus Sippel). Finally, natural gas consumption was also reduced by about 20% compared to 2021, thanks to the implementation of measures to curb consumption and a milder climate in the last months of 2022.

Total CO_2 emissions





Water



Comments on the trend

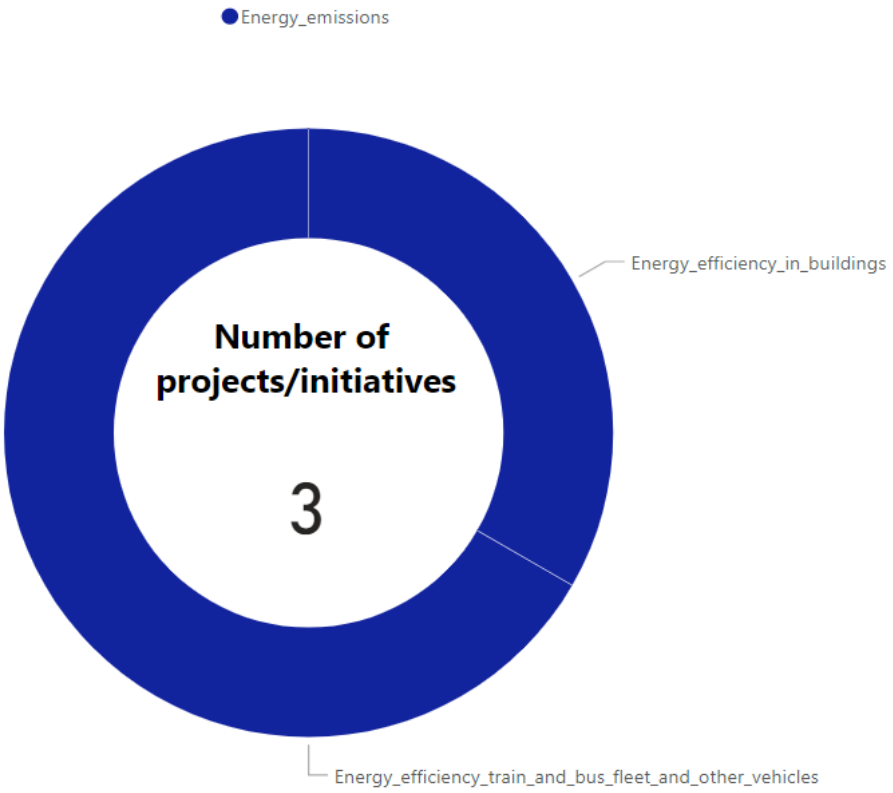
Water consumption shows a substantially constant trend compared to the previous year. The slight reduction in consumption for civil use is attributable to the closure of operations by the subsidiary Autobus Sippel.

Waste

Comments on the trend

The drastic reduction in waste is due to the completion of the construction and maintenance of the railway infrastructure, following the sale of the business by OHE in January 2022.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Construction of a photovoltaic (PV) system on the roof of the buildings of Vlexx GmbH in Mainz	Under evaluation	2023	Energy and emissions	213.72 tCO_2 per year

Trenitalia subsidiaries

Hellenic Train (formerly TrainOse)

Final energy consumption

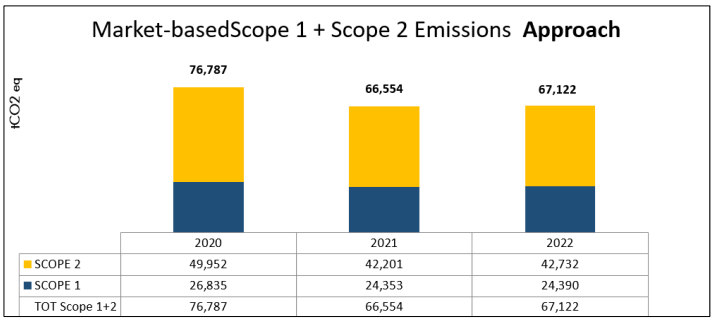
		2022	2021	2020
Electricity for railway traction	MWh	77,748	64,384	66,347
Electricity for other uses	MWh	5,106	5,094	5,441
of which from Guarantees of Origin or self-generation from photovoltaics	%	0%	0%	0%
Diesel	l	8,318,583	8,288,046	9,127,979
Other consumption	GJ	96	101	98
Total consumption	**GJ**	**599,903**	**550,638**	**589,400**

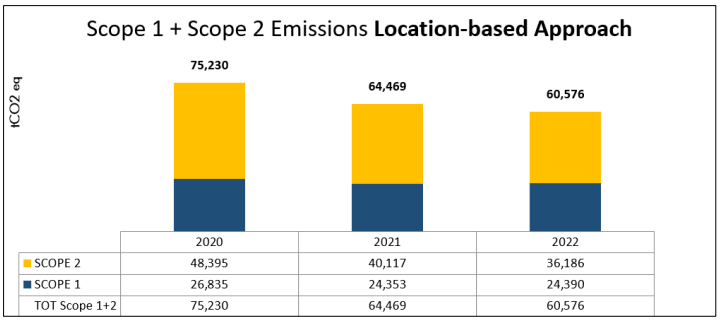
Commentary on trends

The overall energy consumption shows an increase, compared to the last two years, due to the resumption of production activity following the health emergency. In particular, there is an increase of approximately 21% in consumption for electrical traction compared to the previous year, as a consequence of the full recovery of rail traffic after the restrictions in the first nine months of 2021 and the increase in rail production from May 2022.

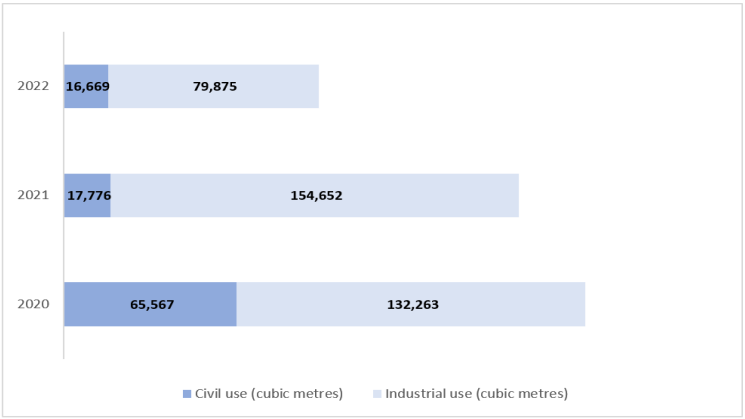
Instead, the consumption of electricity for other uses and of diesel fuel was almost constant. Notably, traction diesel consumptions confirm the values recorded in 2021, with a downward trend compared to 2020 following the electrification of some lines in 2019.

Total CO_2 emissions





Water



Comments on the trend

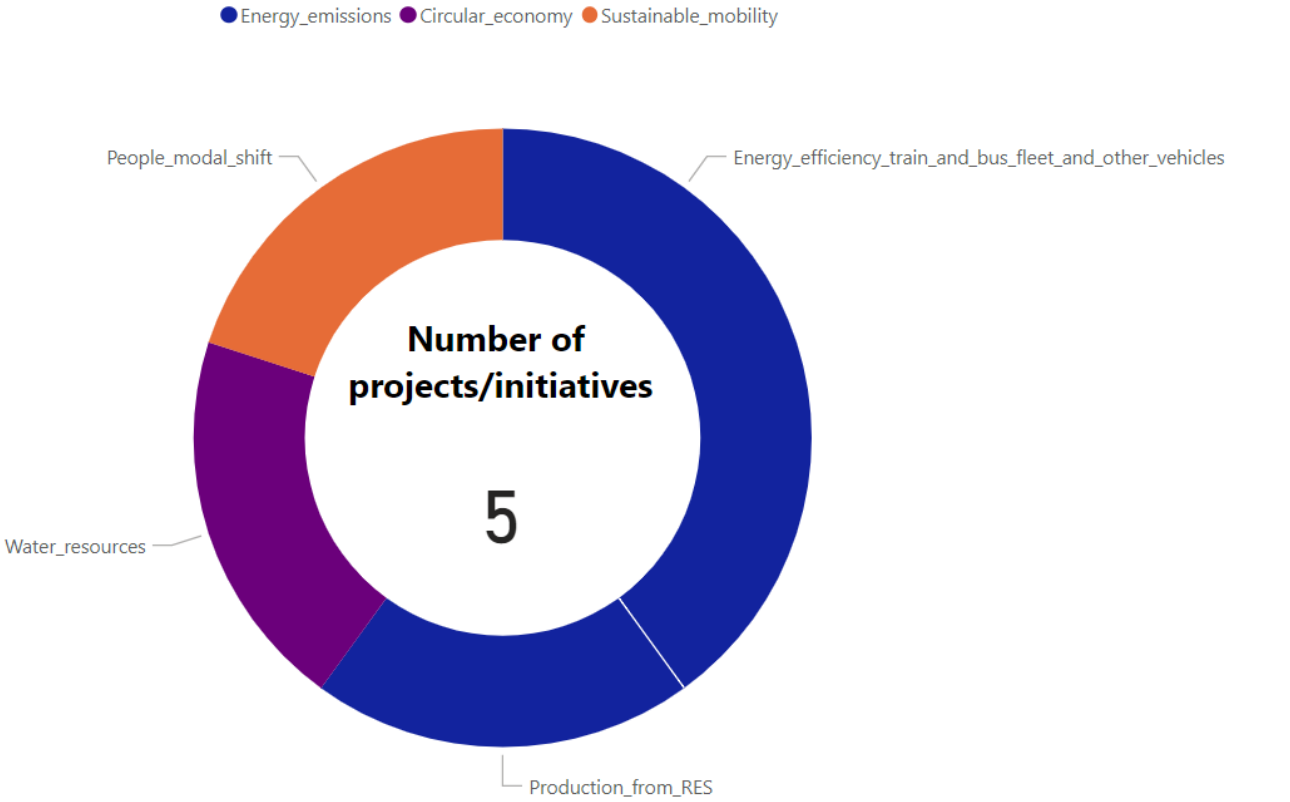
Water withdrawals decreased by almost 44% compared to the previous year, following the adoption of rationalisation measures for the networks and the repair of water losses, confirming the reduction trend of previous years.

Waste

Comments on the trend

Waste generation shows a significant decrease compared to 2021, with values in line with 2020. In 2021, a decontamination and industrial reorganisation activity had been undertaken, which had generated an extraordinary production of special non-hazardous waste.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Installation of solar panels in train depots and workshops	Under evaluation	2025	Energy and emissions	5,340 MWh energy consumption 2019 (baseline) reduction 1,963 MWh reduction 1,183 tCO_2
Introduction of hydrogen-powered rolling stock: 10 new trains by 2028	Planned	2028	Energy and emissions	12,019,214 l diesel 2019 (baseline) reduction 1,637,654 l reduction 4,321 tCO_2
Implementation of the refurbishment of ETR470 high-speed electrically-powered trains	Completed	2022	Sustainable mobility	From 286,195 pax-km per train (x1,000) in semester 2019 to 317,111 pax-km per train (x1,000) in semester 2022

Trenitalia subsidiaries

Trenitalia C2C

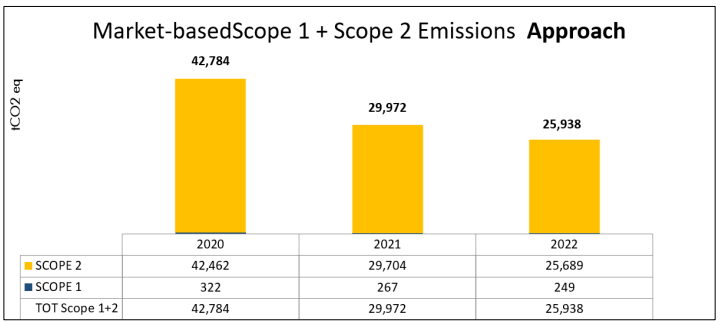
Final energy consumption

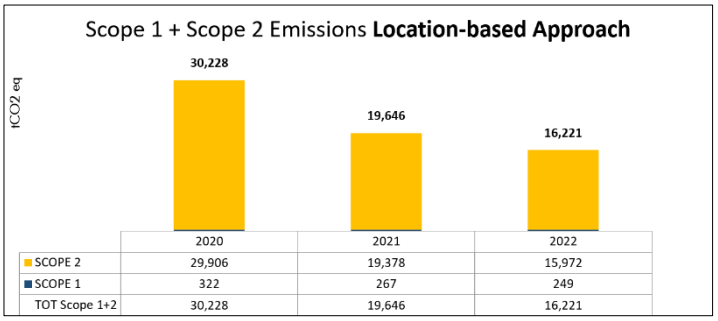
		2022	2021	2020
Electricity for railway traction	MWh	75,105	79,185	104,653
Electricity for other uses	MWh	6,168	6,257	6,949
with guarantee of origin or self-produced solar energy	%	1%	1%	2%
self-produced and consumed solar energy	MWh	72	61	141
Natural gas	Sm^3	119,337	134,582	161,236
Other	GJ	60	0	0
Total consumption	**GJ**	**296,820**	**312,204**	**407,296**

Comments on the trend

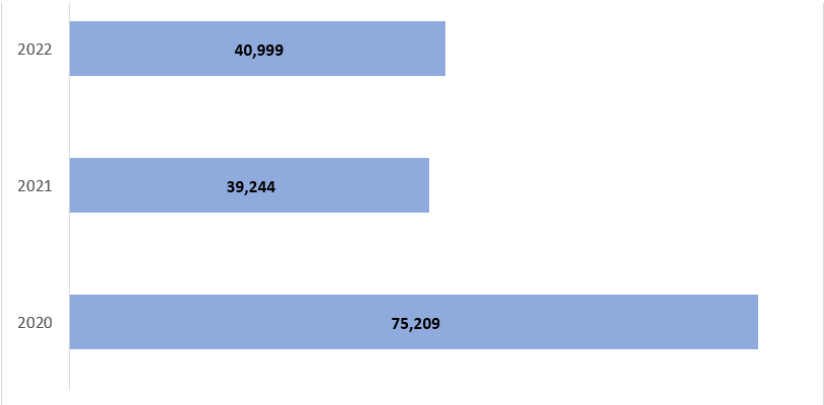
Overall consumption, compared to 2021, shows a reduction in both electricity and natural gas. In particular, there was a decrease of about 5% in electricity consumption for rail traction, following the post-pandemic rescheduling of services and timetables. Electricity consumption for other uses is also slightly decreasing compared to 2021, with a small share (around 1%), which was self-generated by PV and consumed. On the other hand, there was a significant reduction in the use of natural gas for heating, due to a combined effect of milder temperatures in the winter season and the removal of the gas boiler at the Fenchurch Street station.

Total CO2 emissions





Water



Comments on the trend

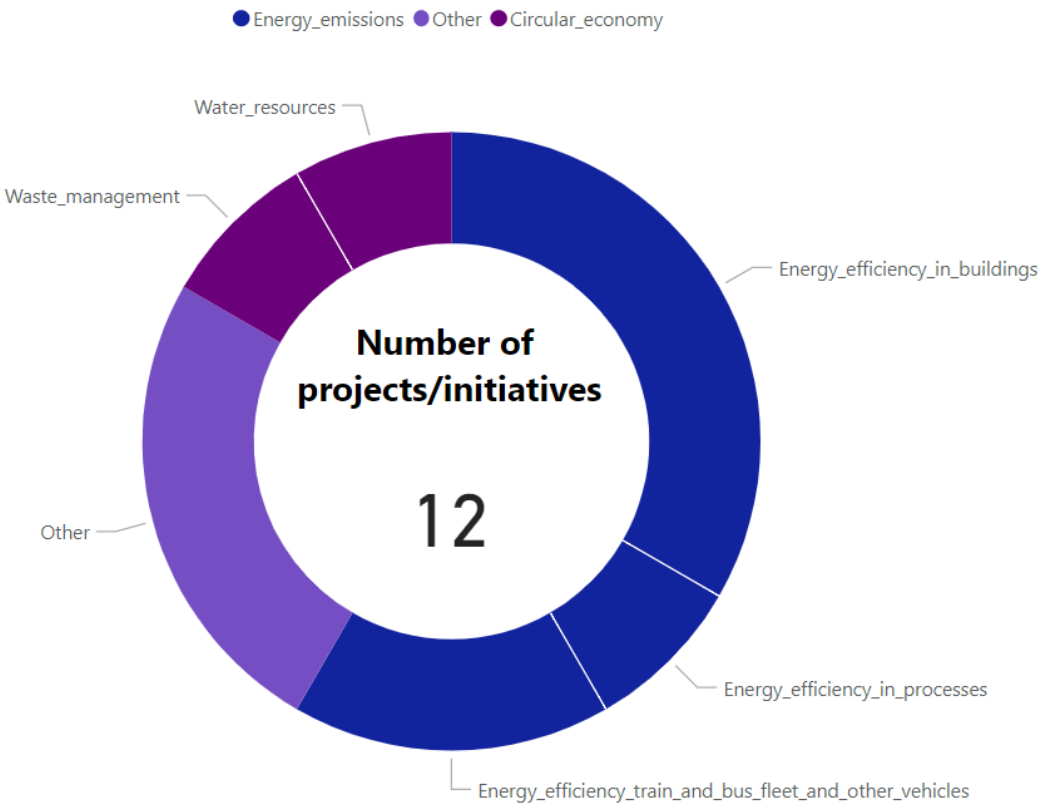
Water consumption in 2022 is in line with that of the previous year.

Waste

Comments on the trend

The waste generation recorded during 2022 is in line with that of the previous year.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
LED implementation in the *Depot* project , *East Ham*. 7 test LED luminaires were installed. Further work is needed to ascertain the need to change the wiring in East Ham.	In progress	2023	Energy and emissions	143 tCO_2e
Installation of photovoltaic systems at Barking station: 124.8kw PV installed on the station roof	In progress	2022	Energy and emissions	24.66 tCO_2e 108.800 kWh Estimated power generation per year
Test to establish energy and financial savings to support the business case for retrofitting the entire fleet of Class 357 trains	In progress		Energy and emissions	337 tCO_2e
Biodiversity surveys with a specialised consultant to determine the current biodiversity at each station and identify potential actions to improve biodiversity at each location	In progress	2023	Other	

Trenitalia subsidiaries

Trenitalia France (formerly Thello)

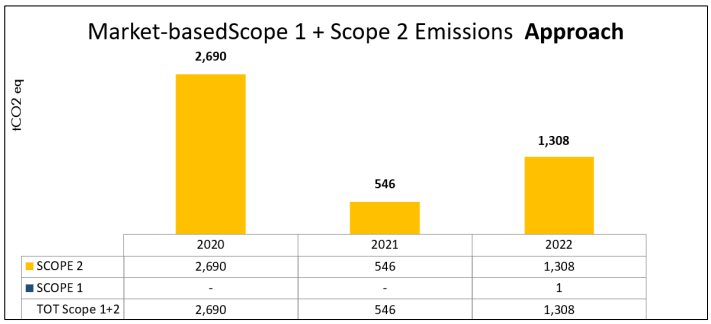
Final energy consumption

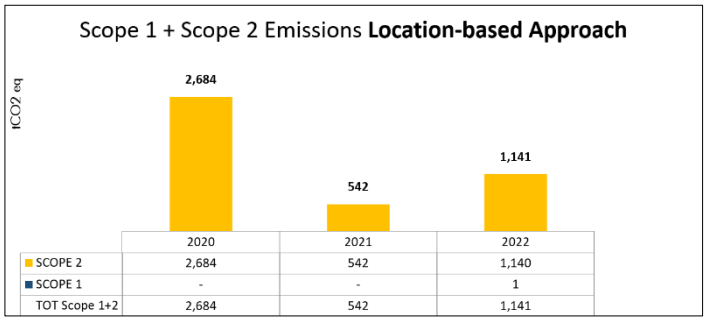
		2022	2021	2020
Electricity for railway traction	MWh	21,522	2,695	10,056
Total consumption	**GJ**	**21,522**	**9,700**	**36,202**

Comments on the trend

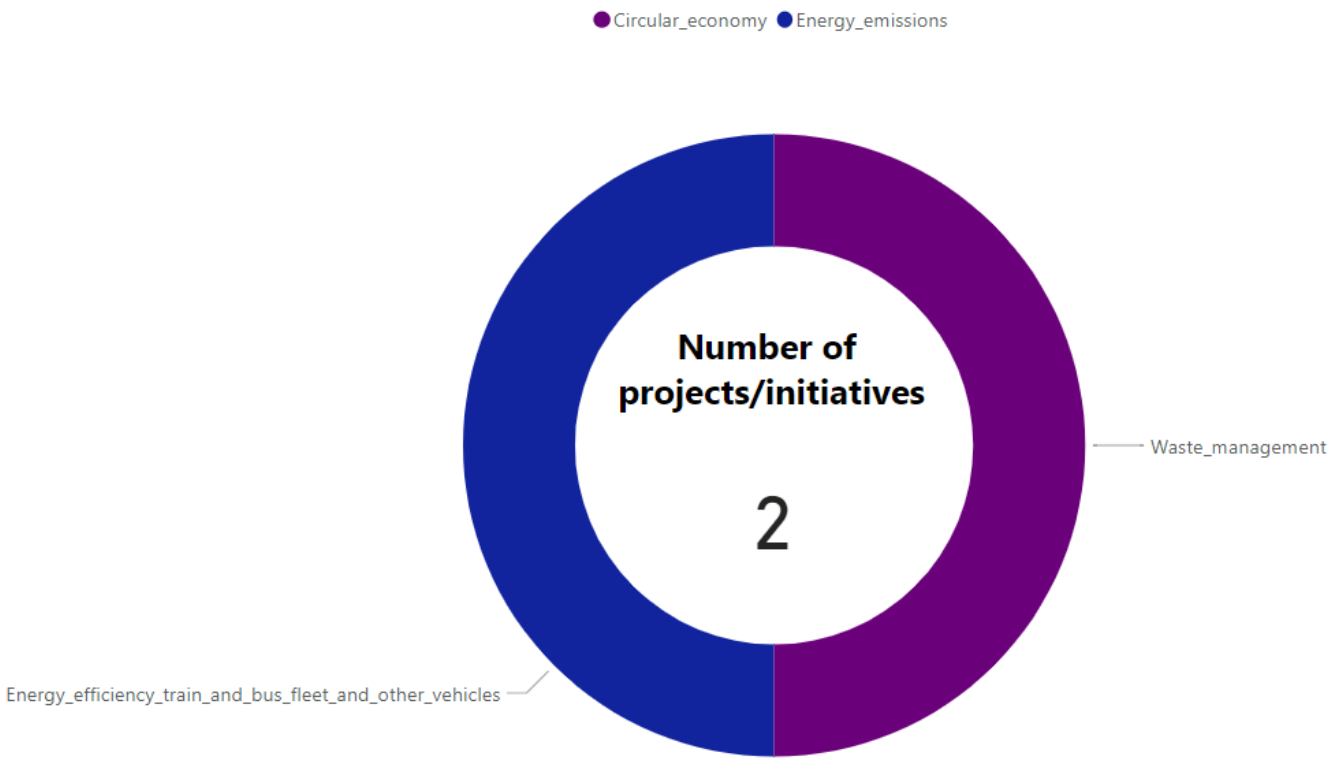
The company Trenitalia France, which was called Thello before the end of 2021, recorded an increase in the consumption of electricity for rail traction, after the reduction in transport activities that had affected both 2020 and, more significantly, 2021. In 2022, passenger transport activities went on, in particular the connection of Milan with Paris and Lyon.

Total$_{CO2}$ eq emissions





Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
Experimental installation on an ETR1000 V300 Zefiro I-F train of Energy Meter System	Under evaluation	2024	Energy and emissions

RFI

OUR APPROACH

RFI's approach to operating national railway infrastructure focuses on boosting the network's value as a fundamental asset of Italy's mobility system and as a key part of improving the local society, economy and environment. A focus on environmental and social protection and regeneration in the areas where it operates lies at the foundation of RFI's mission and is a common thread throughout all its production activities. Taken as a guiding criterion for corporate strategies, for RFI sustainability is both a goal to be pursued and a method of systemically approaching all dimensions of the company, in order to create shared value and contribute to the achievement of sustainable development goals.

Operating the railway network efficiently, safely and accessibly means, in and of itself, contributing to a more sustainable transport system where trains, together with other means of collective transport, can attract growing percentages of private transport, reducing detrimental effects on the population in terms of emissions, consumption of natural resources, accidents and traffic, and meeting passenger and freight transport needs more effectively. The company is making this goal more attainable through actions aimed at driving the network's integration with other modes of transport, improving its connectivity, performance and benefit for passenger and freight railway companies, intermodal operators and passengers, placing particular emphasis on upgrading last mile connections and services and enhancing the station's role as a hub of sustainable, collective, public, shared and active intermodal transport and as a centre of development for the surrounding area.

This means that, on the field and every day, RFI manages, maintains, strengthens, designs and builds lines and stations with an utmost focus on safety, impact mitigation, the rational use of resources, circularity and infrastructure control and resilience. It signifies that RFI has embraced an increasingly extensive and global vision and a growing commitment to developing the land and its assets, with the involvement of the entire organisation, the subsidiaries, suppliers and other stakeholders, in collaboration with institutions. RFI also relies on its established integrated safety management system which comprises the environmental management system, occupational health and safety management system and safe train travel and railway operation management system.

Following the measures drawn up for the economic and social post-Covid-19 recovery in Italy and Europe, RFI took on a central role in defining and implementing the National Recovery and Resilience Plan (NRRP) with the task of carrying out substantial investments by 2026 under Mission 3 of the NRRP *Infrastructure for sustainable mobility*. These are specifically focused on strengthening accessibility and connections between regions and bridging the infrastructure gap between northern and southern Italy and with the midlands, improving the intermodality and resilience, safety, interoperability and energy efficiency of the Italian railway infrastructure.

At the same time, in order to create the highest value from the economic, technical, territorial and social dimension and scope of its investments, even beyond the PNRR framework, RFI has deployed a massive and accelerated implementation and management effort at every stage, aimed as much at compliance with the principles for the quality of infrastructure works as at environmental and social sustainability of the processes that make up its entire value chain. In this respect, RFI has included in its Industrial Plan, among other things, initiatives aimed at integrating sustainability more and more organically into the Company's modus operandi according to the vision guidelines outlined by the RFI Sustainability Committee with ten Strategic Lines of Action (LAS) for RFI's ESG transition: 1) designing more sustainable infrastructures; 2) making the railway network resilient; 3) building and maintaining the network with high performance and reduced negative externalities; 4) making the entire supply chain sustainable; 5) increasing efficiency and sustainability of energy consumption; 6) enhancing and sustainably managing water assets; 7) making the system of higher quality for passenger mobility; 8) improving the user experience in stations and integration with the territory; 9) enhancing assets that are no longer functional for operation; 10) organising work in a sustainable way for our people.

In order to concretely implement the LAS, which regard all RFI different areas of activity, the development of more than 40 ESG Sites have been planned and started in 2022, as specific initiatives foreseen by the RFI Industrial Plan, carried out through interdisciplinary working groups and characterised for being focused, not only on the realisation of specific projects, but also on the contextual systematisation/formalisation of a new approach to related business processes; having the value either of trials or preparatory actions to establish new working methods; being accompanied by the involvement of the stakeholders concerned and by the contextual definition of methodologies/guidelines that regulate their application on a large scale.

Final energy consumption (*)

		2022	2021	2020
Electricity**	MWh	483,320	461,117	454,367
with guarantee of origin or self-produced solar energy	*%*	*29%*	*20%*	*20%*
Transmission of electricity for railway traction (grid losses) ***	MWh	456,703	420,648	388,378
Diesel	l	19,081,926	18,911,983	16,990,572
Natural gas	Sm^3	8,339,626	8,999,846	8,397,512
Other consumption	GJ	27,824	30,209	30,699
Total consumption	**GJ**	**4,348,881**	**4,159,140**	**3,936,449**

Comments on the trend

The electricity consumption for internal use shows an upward trend over the past three years, closely related to the gradual resumption of activities after the Covid-19 health emergency, which resulted in lower energy needs between 2020 and 2021 in connection with the reduced presence of people in workplaces and stations and the temporary suspension of production activities in industrial workshops. In 2022, there is also an increase compared to the pre-pandemic period due to the activation of new technological installations.
In 2022, the electricity share for internal use covered by guarantees increase in parallel thanks to the increase to 200 GWh/year (equal to 40% of total needs) of the supply of green energy through a new contract active since May '22 (the remaining share, as well as electricity for traction, is procured directly by RFI on the Power Exchange (GME) through a contract with the GSE), confirming the company's commitment to pursue sustainable policies aimed at reducing emissions.

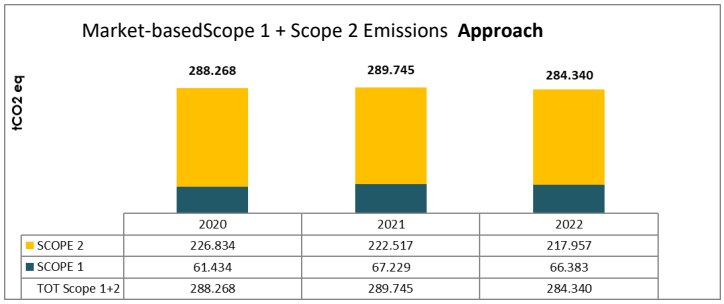
With reference to the overall consumption of diesel fuel in the three-year period, there is a more marked increase between 2020 and 2021 due to the effect of the recovery of maritime traffic and the use of a greater number of vehicles and work vehicles against a lower number of occupants per vehicle in compliance with the company's anti-Covid procedures; in 2022 overall consumption compared to 2021 remained substantially stable due to the combined effect of an increase in consumption for rail traction (about +4%) and for navigation (about +4%), and a decrease in consumption for heating (about -20%) due to both more efficient asset management and the less rigid temperatures recorded during the winter months.

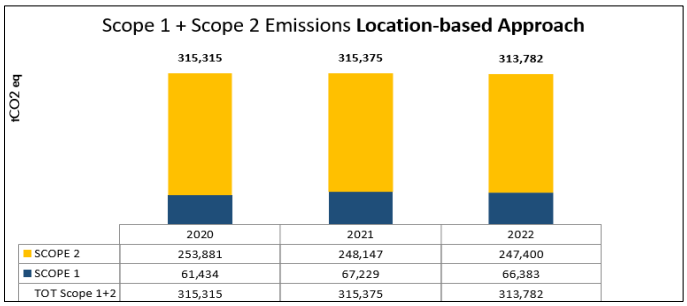
In 2022, natural gas consumptions, which had dropped significantly in 2020 compared to the pre-pandemic period due to less activity in the workshops and fewer people in the offices, fall by around 7% in spite of the recovery due to the decommissioning of natural gas heating systems and natural gas-fired switchgear.

With reference to other consumption (energy from district heating, LPG for heating and petrol for vehicles, work vehicles/equipment), the downward trend continues in the three-year period, between 2021 and 2022 by about 9%, linked to the lower use of energy from district heating in work and station spaces.

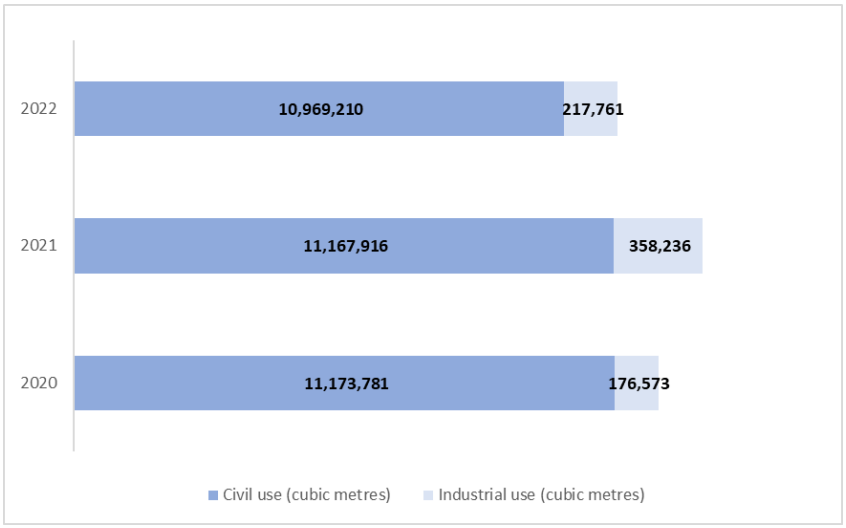
** This excludes consumption by station customers.*
*** Includes HV (high voltage) electricity used by RFI's diagnostic trains and other working vehicles and does not include HV electricity consumed by trains of railway undertakings operating on the network managed by RFI.*
**** This is energy that dissipates along the railway transport electricity grid used to power trains travelling on tracks operated by RFI. The value is estimated following the instructions of the International Union of Railways (UIC), indicated in UIC 2008 fiche 330 "Railway specific environmental performance indicators".*

Total CO_2 eq





Water

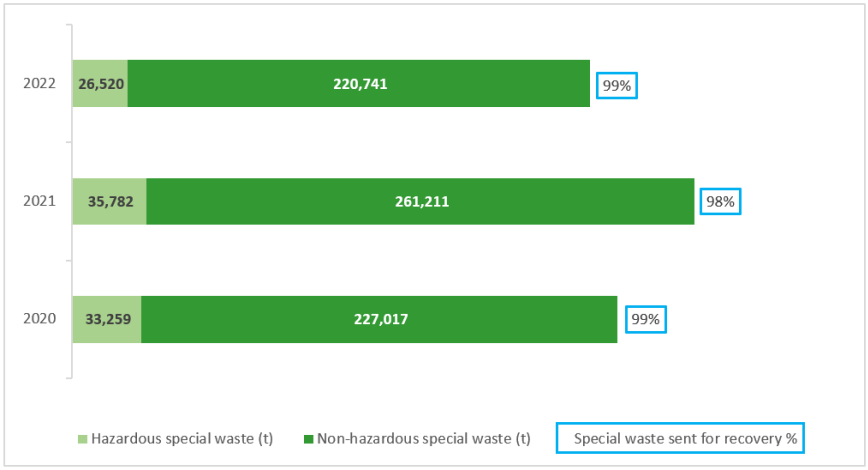


Comments on the trend

Water consumption shows a reduction of about 1% over the three-year period, characterised by an opposite trend in the two two-year period: in 2021 there is an increase of about 2% compared to 2020, mainly due to higher withdrawals for industrial use attributable to train washing activity. The latter was increased, both due to the gradual resumption of activities accompanied by anti-counterfeiting measures, and the acquisition of new washing stalls.

In 2022, there is a decrease compared to 2021 of about 3% due, on the one hand, to the reduction in consumption for civil use linked to the lower withdrawals from the aqueduct and the closure of some wells and, on the other hand, to the lower use of water (industrial use) for washing trains (related to the gradual restoration of standard washing cycles following the end of the sanitary emergency) and, finally, to the increasingly precise measurement of consumption.

Waste



Comments on the trend

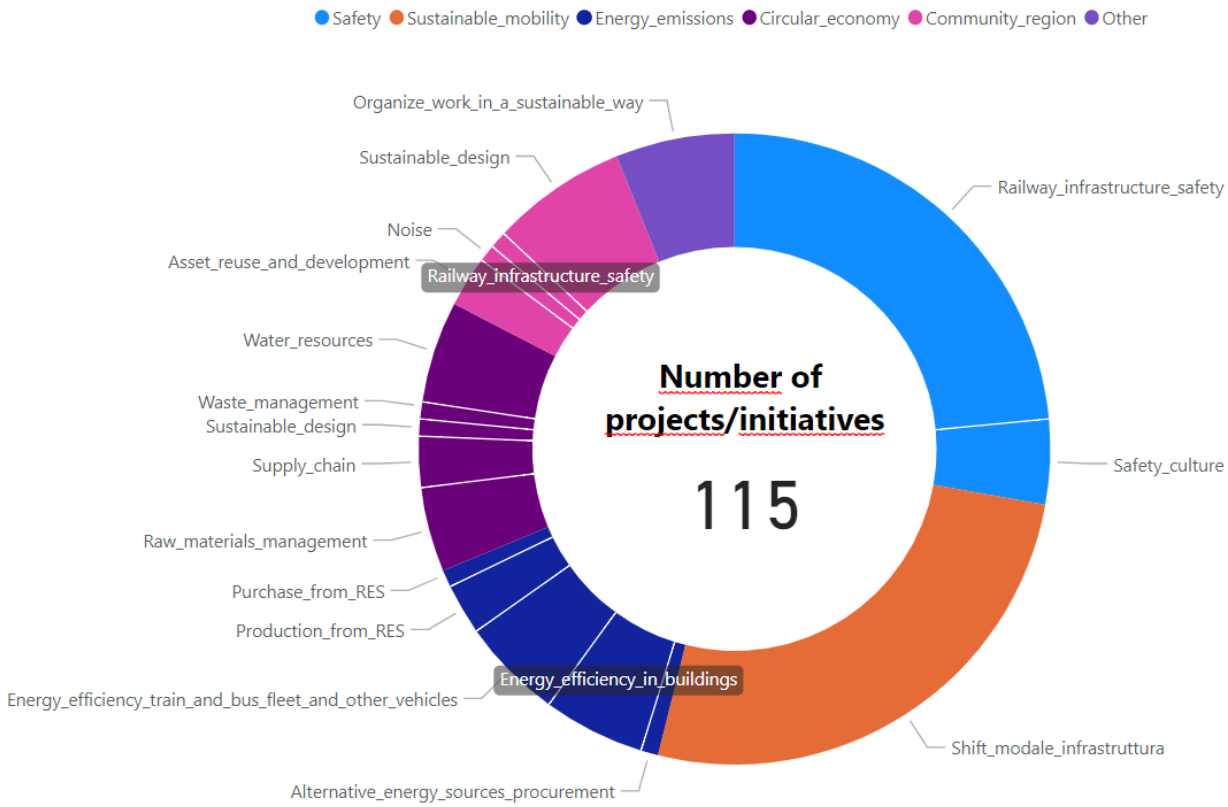
Waste generation shows opposite trends in the individual two-year periods.

In fact, in 2021 there will be an increase of about 14% compared to 2020 due to growth in maintenance activity on the infrastructure, leading to a general increase in both hazardous and non-hazardous special waste.

In 2022, the generation of special waste will be reduced by about 17% overall compared to the previous year. This decrease is related to the lower production of steel waste and copper cables, regarding non-hazardous special waste, and to the pursuing of the programme for the progressive replacement of creosote oil-impregnated wooden sleepers with eco-impregnated wooden sleepers or prestressed concrete sleepers, with a lower environmental impact, with regard to hazardous special waste.

The proportion of non-hazardous to hazardous special waste remains substantially unchanged in 2022 compared to 2021, while the proportion of waste sent for recovery returns to 99%.

Projects and initiatives



Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Electrification of diesel traction lines	In progress	2032	Energy and emissions	84% (as of 2032) Electric lines approx. 1,800 km lines to electrify
Upgrade of the fleet of on-track and diagnostic machines with electric/hybrid traction vehicles	In progress	2028	Energy and emissions	- 4.300 tCO_2
Interventions for saving traction electricity: • Construction of Electrical Substations (ESS) for train braking energy recovery: innovative ESSs allow train braking energy storage and voltage regulation in order to reduce losses and improve the performance of the 3kVdc electric traction system • ATO-Atonomous Train Operation (over ETCS): testing of technological support systems for efficient driving on ERTMS-equipped lines	In progress	2032	Energy and emissions	-225 tCO_2 (no. 15 innovative ESSs) Overall, 15% saving on traction electricity
Intervention to save electricity for internal use: • Installation of LED lamps for light towers, canopies and underpasses; • Installation of RED-Electrical Heating systems Self-adjusting switches	In progress	2032	Energy and emissions	- 20% on electricity for own use
Experiments in the energy efficiency of company assets. The main actions in progress include: • Test Mini wind system experimentation with the use of the natural windiness of the sites and air flows associated with the passage of trains for power supply (e.g. of radio coverage diffusers, security lighting, fire-fighting systems). • RESTART (Renewable Energy to SupporT Andvanced Railway Technologies): testing solutions for energy upgrading, savings and promotion of renewable energy sources within RFI technological assets	In progress	2024	Energy and emissions	
Reuse of foundry sand for the superstructure: the National Foundry Superstructure Workshop in Bari, which specialises in the production of manganese steel "frogs" (the foundation for railway exchanges), created an automated system to expand by up to 70% the regeneration of foundry sand used to prepare moulds, reducing the amount of sand disposed, reusing it in the production cycle and improving health and safety conditions for operators.	In progress	2025	Circular economy	- 550 t/year of sands
Experimentation of systems for the recovery, purification and reuse of water in the washing stalls (for work vehicles and trains) at the Carini and Catanzaro National Workshops and at Milan Central Park	In progress	2026	Circular_economy	-13.000 m3 of water/year
Actions for infrastructure resilience: climate risk. Integrated set of analysis, monitoring and intervention actions to strengthen the resilience of infrastructure against intense and extreme weather events and hydrogeological instability with the aim of increasing the safety and preserving the continuity of railway services. Actions in progress include:	In progress	2032	Safety	Over 1400 mitigated single points approx. 600 bridge pier sensors

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
- implementation of interventions on singular points of the infrastructure to mitigate hydrogeological instability; - bridge pier undermining sensors: installation on bridges with piers in the riverbed of sensors to monitor the bottom elevation during flooding and detect undermining events at an early stage (development of the *BLESS+* pilot project); - installation of weather stations and hydrometers distributed throughout the national infrastructure for the analysis, management of weather warnings and weather-climate impacts - development of a weather-climate impact forecasting platform based on analysis for the prediction and geo-localisation of intense precipitation events and the possible triggering of landslide event by rain (engineering of the RAMSES and SANF experimental projects)				Over 4500 between rain gauges, weather stations, hydrometers and alarm systems Weather-climate impact forecasting platform (by 2025)
Actions for infrastructure resilience: seismic risk. Integrated set of analysis, monitoring and intervention actions to reduce the seismic vulnerability of bridges and railway infrastructure. The main actions in progress include: • specific seismic improvement works on infrastructure based on checks on the seismic vulnerability of works of the larger railway system • implementation of a seismic network to record the shake level along the line after an earthquake to detect which sections need to be closed and inspected • designing and building a Early Warning Sismico (EWS) system on HS and traditional lines to boost efficiency in handling earthquakes and reduce the time needed to halt circulation.	In progress	2032	Safety	400 Punctual interventions for seismic improvement 15,200 km equipped with seismic network 1,400 km equipped with EWS
Conversion of lines for tourist use: intervention to convert railway lines no longer used for commercial services in areas of high natural and landscape value to promote the appreciation of the historical railway heritage and of local areas	In progress	2026	Community and territory	no. 13 lines to be reconverted
Integrated Stations Plan (ISP): redeveloping indoor spaces and adjacent areas in a functional manner and building new stations: organic set of actions aimed at developing the station's role as an intermodal hub and centre of development for the surrounding area, with the relevant objectives and designing and building methods focused on environmental and social sustainability. Qualifying objectives include: • increasing the level of connectivity with local public transport, sharing mobility and active mobility; • Improved accessibility and usability within stations through inclusive and barrier-free design; • enhanced public information and wayfinding outside and inside the station. All actions are planned and implemented in a manner that minimises the consumption of natural resources and reduces emissions over the entire life cycle of the works, taking into	In progress	2032	Community and territory Sustainable mobility	approx. 500 no. of stations to upgrade approx. 50 no. new hubs/stations on metro lines

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
consideration stakeholder needs and by applying international sustainability protocols and standards such as Envision, Leed, WEL, GBC Historic Building, etc.				
Initiatives to improve the service level of the transport infrastructure. Among the qualifying actions • Extension of the HS network by implementing new lines to link the more peripheral areas of the country more closely and maximise the supply of high-quality North-South connections and along transversal routes • performance and technological enhancement of Long Distance (LD) lines; • Implementation of infrastructural, technological and management actions, especially on nodes with heavy traffic pressure, to support high-frequency services, increasing capacity, and improving the quality and regularity of LPT (Local Public Transport) services; • Measures in regional areas to improve the regularity of circulation, speed and hourly frequency of suburban and regional LPT services • performance adjustments to the TEN-T core network (freight) standards to 2032 (gauge, module and axle weight) to make the network more high-performance and interoperable and attract increasing shares of rail freight	In progress	2032	Sustainable mobility	over 1,300 km new infrastructure (pax and freight) Over 400 km new LPT infrastructure Over 700 km of lines equipped with capacity-enhancing technologies (e.g. ERTMS HD) 100% of the network suitable (module, gauge and axle weight)
Development/enhancement of last-mile connections between the rail network and other transport nodes (airports, ports, terminals) to encourage modal shift of passengers and goods	In progress	2032	Sustainable mobility	14 airports, 12 ports and 12 freight terminals integrated with the rail network
Construction of noise barriers and direct interventions on receptors to contain and reduce noise emission	In progress	2032	Community and territory	Over 190 km noise barriers
Extension of assistance services to PRM (Passengers with Reduced Mobility) travellers, including: expansion of the circuit of stations offering assistance services, development of technologies for autonomous orientation in stations, etc.	In progress	2032	Sustainable mobility	Over 50 extra stations with PRM services
Extension of the advanced IeC (Information and Communication) technology system to further stations in the network for greater reliability of the public information process, greater integration between different information channels, management efficiency	In progress	2032	Sustainable mobility	no. 850 new IeC installations

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Implementation/upgrading of security systems (video-surveillance, anti-intrusion, access control, etc.) aimed at protecting people in stations (staff, travellers, etc.) and protecting assets	In progress	2031	Safety	no. 260 realisation/revamping of security installations
ERTMS Accelerated Plan: upgrading of the current safety and signalling systems to the ERTMS interoperability standard to equip the entire Italian network by 2036 (ahead of the deadline set at European level for 2050), with simultaneous renewal, upgrading or enhancement of the technological systems connected to ERTMS (ACC, GSM-R, ETCS, SCC). ERTMS benefits include: increased safety and performance, punctuality, energy efficiency	In progress	By 2036	Safety	approx. 11,300 km of line to be equipped with ERTMS
Integrated automatic work site protection system (SIPAC): innovative system that using line signalling systems to spot and warn site workers on tracks of approaching trains on the adjacent track; workers can also use the system to request a temporary halt to circulation via a mobile device	In progress	2023	Safety	Over 110 no. of facilities/lines equipped
Electrocution PPE: Personal Protective Equipment - non-contact 3 kVdc voltage detector - specially developed in RFI for personnel in the traction energy sector as an additional preventive measure against human error	In progress	2032	Safety	no. 600 IPR
Technical Academy: actions aimed at improving the efficiency and effectiveness of the technical training system through: • building/revamping three training centres (Milan, Bologna, Naples) • redefinition of technical training programmes and processes, digitisation of teaching methodologies and training content, implementation of virtual and physical simulators (training camps)	In progress	2028 (centres); training: *ongoing activity*	Safety	no. 18,000 persons trained/year
ESG work sites: an organic set of governance and change management initiatives aimed at accelerating the integration of sustainability into all business processes that make up RFI entire value chain. *ESG work sites* are managed by interdisciplinary working groups according to the methodology of design thinking, with the involvement of stakeholders, and are focused not only on the realisation of specific projects, but also on the contextual systematisation/formalisation of a new ESG-oriented approach to the related processes through the elaboration of guidelines, procedures, pilot projects, etc. for its application on a large scale. Among the more than 40 *ESG Sites* activated: • Redefinition of the Design Manual and Technical Specifications for Civil Works and Tariff Frame in terms of sustainability and LCA; • guidelines for the sustainability assessment of all RFI investment projects for stakeholder engagement • integrated governance model for sustainable work sites: guidelines on social impact mitigation, work site management, monitoring etc.	In progress	2026	All	Through the initiatives developed in the ESG yards, RFI wants to achieve • the complete transition ESG business processes to maximise the company's contribution to the achievement of the SDGS and Group objectives • the widespread introduction in all areas of activity of good sustainability practices on the governance, environmental and social fronts

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
• memoranda of understanding with external technical stakeholders for monitoring and managing critical weather and climate issues; • Multi-strategy action plan for CO_2 emission reduction and EE supply with Guarantees of Origin; • model for the integrated management of water assets; plan for the transfer of water assets to local communities for valorisation; • Fitting the station network in an ESG perspective: methodologies for potential analysis and action plan; • Assessment of suppliers: identification of ESG KPIs for tenders and Vendor Rating and vetting requirements • RFI Sustainable Procurement System: systematisation and formalisation • Surveys and Focus Groups on expectations and needs of our people • ESG culture: Dissemination and Change Agents; • Talks with Railway Companies for managing network unavailability: governance model for mitigation of user impacts • new stakeholder-oriented KPI punctuality				Among the expected objectives as an effect of the new approach to business processes introduced by ESG Yards: • 100% procurement with ESG criteria • 100% projects with sustainability analysis and engagement • 100% (to 2026) Revised Civil Works Design Manuals and Tender Specifications

RFI subsidiaries

Grandi Stazioni Rail

Final energy consumption (*)

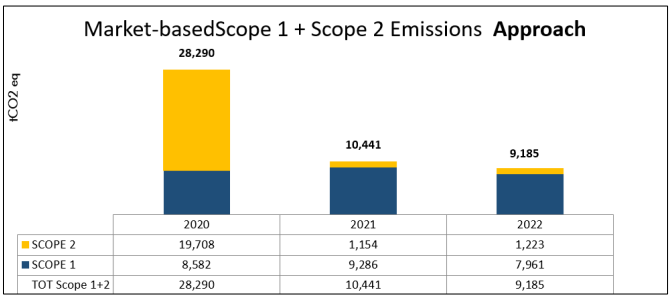
		2022	2021	2020
Electricity	MWh	62,266	59,337	53,824
with guarantee of origin or self-produced solar energy	%	100%	100%	29%
Diesel	l	136,725	192,702	190,469
Natural gas	Sm^3	3,801,098	4,411,913	4,044,491
Other consumption	GJ	20,686	19,445	16,416
Total consumption	**GJ**	**380,128**	**391,300**	**355,794**

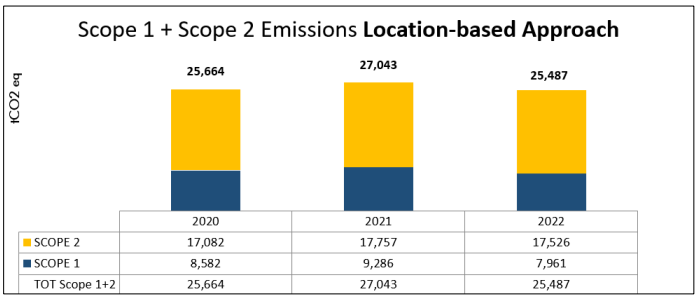
Comments on the trend

During the three-year period 2020-2022, the increase in electricity consumption (in the last year +5% over the previous year) is due to the full recovery of activity. The share of renewable energy certified through Guarantee of Origin (GO) is now steady at 100%. In 2022, diesel consumption has been reduced by 29% compared to 2021, mainly due to an optimisation of consumption in the first half of the year and a rescheduling of the switching times of the heating plant at the Genoa Piazza Principe station. The consumption of natural gas has been also reduced compared to 2021 by about 14%, mainly due to the streamlining of the plant at the Milano Centrale station and the delayed start of the 2022-2023 heating season as per regulatory requirements. Further reductions, observed in the last two months of the year 2022, are due to temperatures above the seasonal average and initiatives to rationalise the consumption of air conditioning systems in the network stations.

* *Consumption attributed to station customers is not included.*

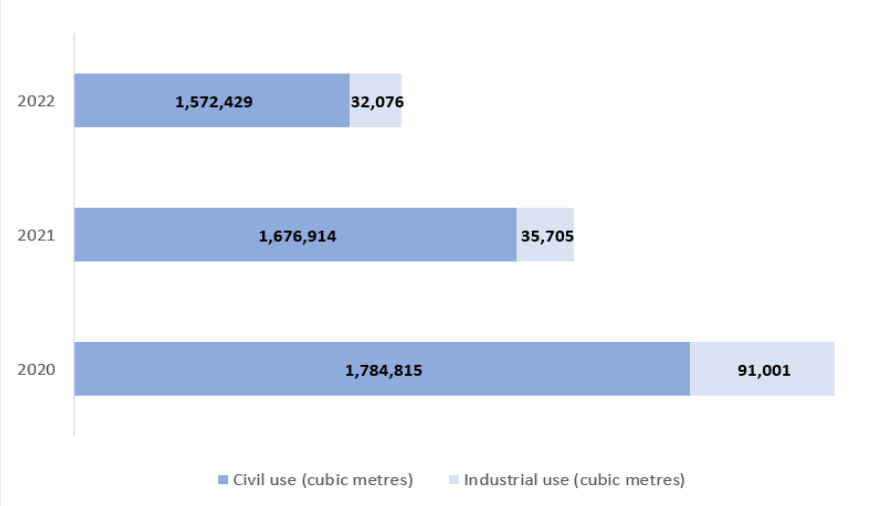
Total$_{CO2}$ eq emissions





The figures refer to the environmental aspects managed directly or on behalf of the company or the group companies. They exclude consumption by station customers.

Water



Comments on the trend

Water withdrawals show a steadily decreasing trend over the three-year period, with an overall decrease of about 14%.

In particular, in 2022 there will be a reduction of about 6% in withdrawals for civil use, compared to 2021, attributable to a general reduction in station consumption, and about 10% in withdrawals for industrial use, mainly attributable to the reduction in water consumption for cooling the evaporative towers at Roma Termini station.

Special waste

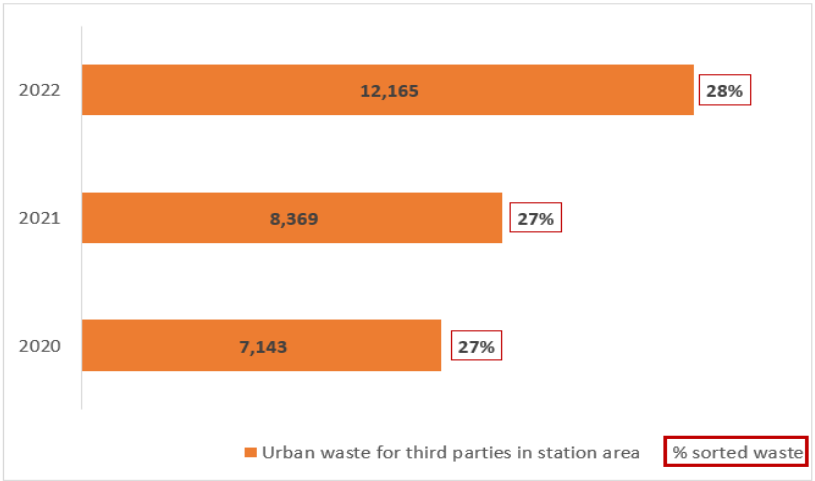
Comments on the trend

Over the three-year period, there was an overall decrease in the amount of special waste produced of about 48%.

However, in 2022, compared to the previous year, there was an increase in special non-hazardous waste sent for recovery, mainly related to the extraordinary production of sludge generated by the purification plants at the Venice Santa Lucia station.

All the special waste produced is sent for recovery.

Urban waste: station customers

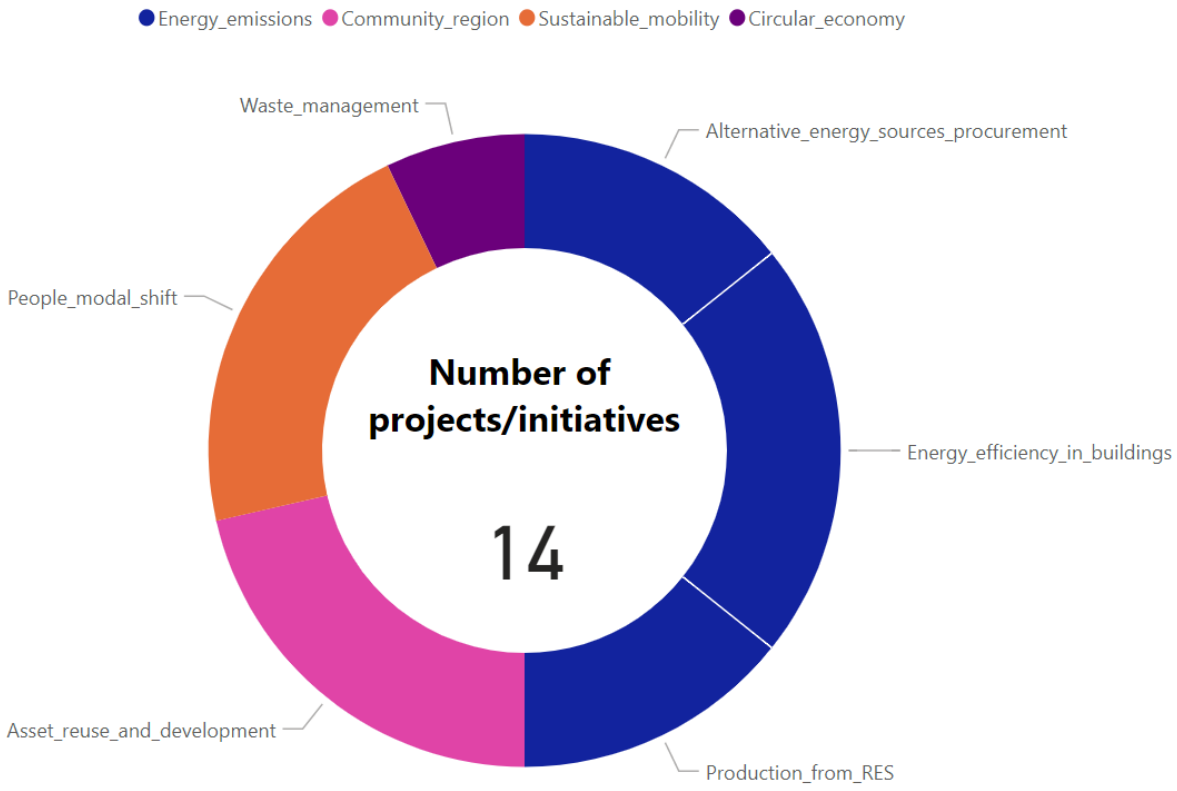


Comments on the trend

In the three-year period 2020-2022, waste collected at stations shows an increasing trend, mainly related to a gradual return of values in line with the pre-pandemic period.

In 2022, there will be an increase in the amount of waste produced for third parties at the station, both undifferentiated (approx. +43%) and sent for separate collection (approx. +50%).

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Redevelopment of Piazza dei Cinquecento in front of Rome Termini station, with investments in intermodality and sustainability solutions serving the city	Planned	2025	Community and territory	sqm redeveloped 35,000 approx.
Construction and commissioning of a photovoltaic system on the roof of the new parking lot of the Rome Termini station. The energy produced will mainly be used for self-consumption within the station network	In progress	2023	Energy and emissions	Production of about 700 MWh/year + 1.1 % energy autonomy Network GS Rail.
Construction of new car parks at Milano Centrale and Napoli Centrale with improved intermodality (Train - Car - Public Transport - Car and Bike Sharing), and development of infrastructure designed for charging electric cars	In progress	2023	Sustainable mobility	785 new parking spaces between Milan (n.425) and Naples (No.360)
Building new bike parking facilities at the Rome, Genoa, Bologna, Naples and Bari stations	Planned	2025	Sustainable mobility	5 new bike parking facilities for a total of approximately 800 spaces
Implementation of new photovoltaic systems on roofs available at the GS Rail network for a total of 50,000 sqm of roofs involved	To implement	2027.	Energy and emissions	Production of about 5,200 MWh/year[2] + 8 % energy autonomy Network GS Rail
Implementation of measures to improve the efficiency of the air-conditioning system in the stations of Genoa Piazza Principe (where the use of diesel oil will be eliminated), Genoa Brignole, Rome Termini, Venice Santa Lucia and Venice Mestre, Florence Santa Maria Novella and Turin Porta Nuova	Planned	2031	Energy and emissions	- 4,320 tCO_2 [3] - 10.5% of total emissions (market based approach) of the Company compared to baseline 2019.

[2] *Only benefits achieved by Group companies are considered (thus excluding those achieved by station customers).*

[3] *Only benefits achieved by Group companies are considered (thus excluding those achieved by station customers).*

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Construction of a new car park at Bologna Centrale with improved intermodality (Train - Car - Public Transport - Car and Bike Sharing), and development of infrastructure designed for charging electric cars	Planned	2028	Sustainable mobility	110 new stalls

RFI subsidiaries

Terminali Italia

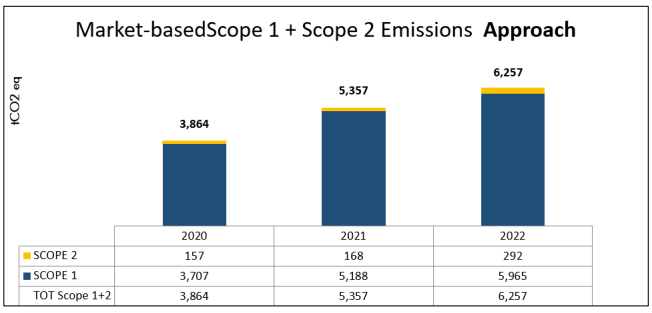
Final energy consumption

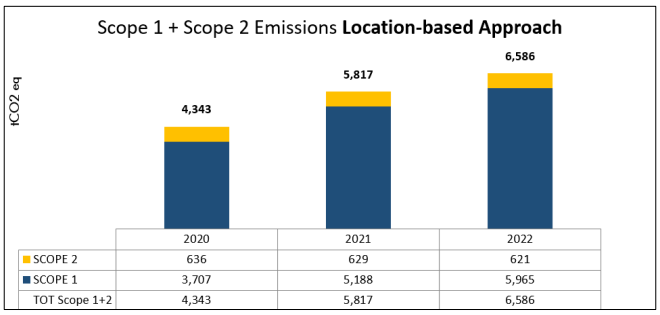
		2022	2021	2020
Electricity	MWh	2,372	2,248	2,123
with guarantee of origin	*%*	*73%*	*84 %*	*85 %*
Diesel	l	2,177,384	1,883,060	1,346,266
Natural gas	Sm^3	14,835	17,673	16,297
Total consumption	**GJ**	**87,818**	**76,742**	**56,842**

Comments on the trend

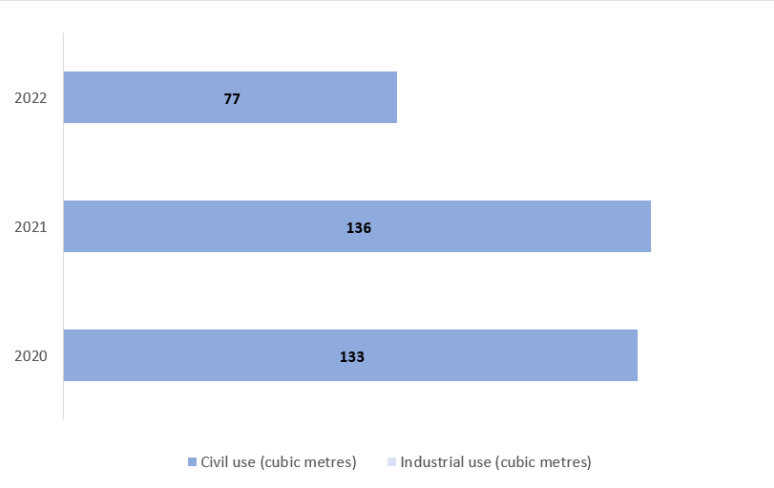
There was an increase in electricity consumption of about 6% per year, mainly due to an increase in consumption at the Livorno Plant, which saw an increase in the use of industrial machinery compared to 2021 of +4,091 Crane Pulls (+98%). The share of renewable energy certified with Guarantees of Origin (GO) decreased over the past year due to a decrease in electricity consumption in Verona (the only plant using GO-certified electricity), which was due to a drop in the number of handlings (negative balance of crane pulls compared to 2021 of 3.6%). With reference to diesel consumption, an overall increase of about 62% is shown in the three-year period, generated by a 40% growth in the two-year period 2020-2021 due to the activation of new manoeuvring services and a 16% growth in the two-year period 2021-2022 due to an increase in crane use.
Natural gas consumption shows a decrease of about 9% over the three-year period 2020-2022, resulting from opposite trends in the two-year period considered: an increase of about 8% between 2020 and 2021 followed by a decrease of 16% between 2021 and 2022 mainly due to the adoption of energy efficiency policies.

Total CO_2 eq





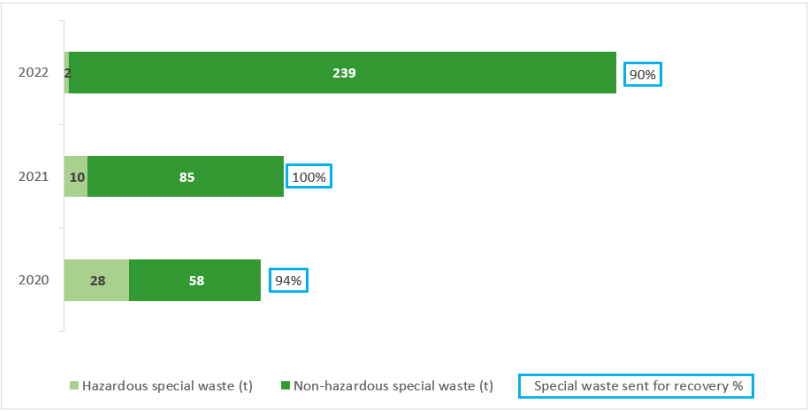
Water



Comments on the trend

With regard to water consumption, referring only to the Verona terminal, there is an overall decrease in the three-year period, a combination of opposite trends in the individual two-year periods: a slight increase (+2%) in the period 2020-2021 and a significant decrease (-43%) in the period 2021-2022 in the light of the adoption of awareness campaigns on the correct use of water resources aimed at personnel.

Waste



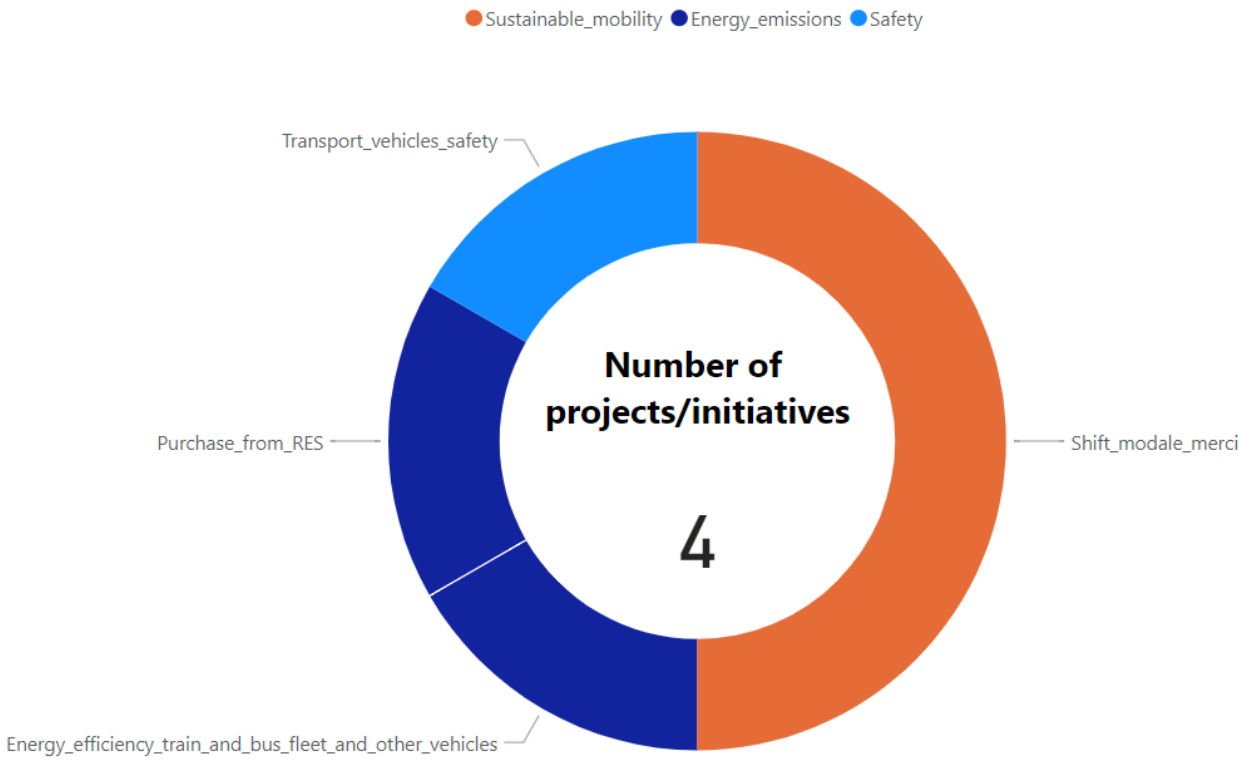
Comments on the trend

Overall, there was an increase in special waste generated over the three-year period (+177%), with opposite trends in non-hazardous and hazardous waste.

In particular, the production of non-hazardous waste increases by 177% from 2021 to 2022 due to the start of extraordinary demolition campaigns with two mobile cranes. The production of special hazardous waste shows, from 2021 to 2022, a clear reduction of -78% due to the outsourcing of the maintenance service of operating vehicles.

The share of special waste sent for recovery stood at 90% in 2022, down from 2021 due to a higher production of waste for disposal caused by the maintenance and cleaning activities of the container washing plant at the Marzaglia Terminal, which produced aqueous liquid waste, sludge and filter residues and spent activated carbon.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Increased train receiving capacity in the Terminali Italia facilities with the extension of 11 terminal tracks to 750 m, the expansion of the areas dedicated to the storage of Intermodal Transport Units (ITUs), for a total area for the entire network of approximately 233.000m² and the purchase of electric gantry cranes that will allow an increase in the number of trains processed.	Under evaluation	2032	Sustainable mobility	430,000 additional ITUs transported 7 new Electrical Portal Cranes -120,000 tonnes CO_2

RFI subsidiaries

Bluferries

Final energy consumption

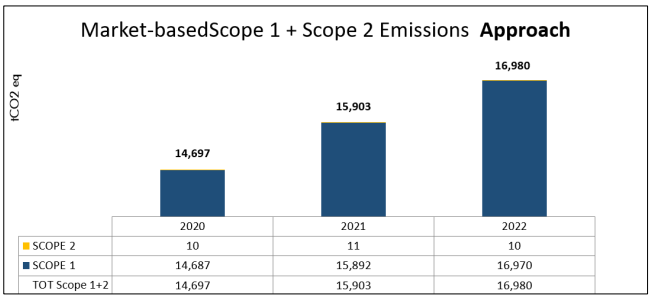
		2022	2021	2020
Diesel	l	7,248,442	6,788,091	6,273,743
Electricity for other uses	MWh	21	23	20
Total consumption	**GJ**	**227,036**	**212,631**	**196,514**

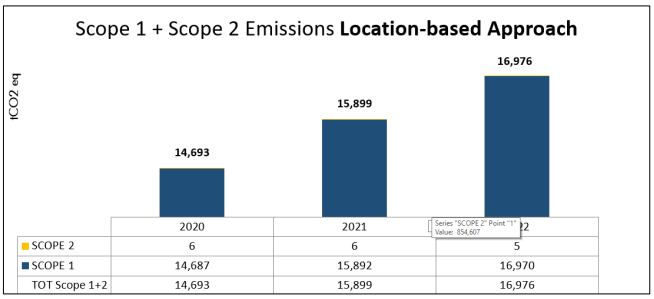
Comments on the trend

During the three-year period 2020-2022, diesel consumption shows an upward trend (about +16%), explained by the increase in the number of runs of the vessels in operation; in particular, in 2021 there is an increase in activity with the mitigation of anti-Covid measures and the entry into operation of the new vessel Sikania (more efficient in terms of consumption than the rest of the fleet), while in 2022 there is a greater demand for runs compared to the previous year.

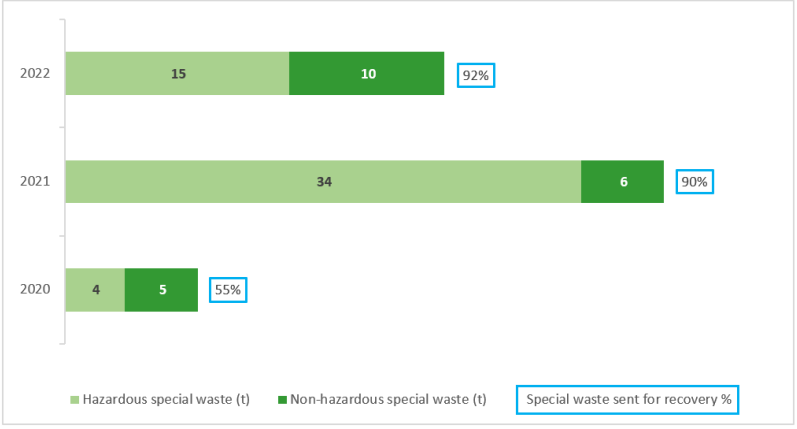
With regard to electricity consumption, there is a decrease of about 11% in 2022 compared to 2021 due to an optimisation in the use of air-conditioning systems.

Total CO_2 eq





Waste



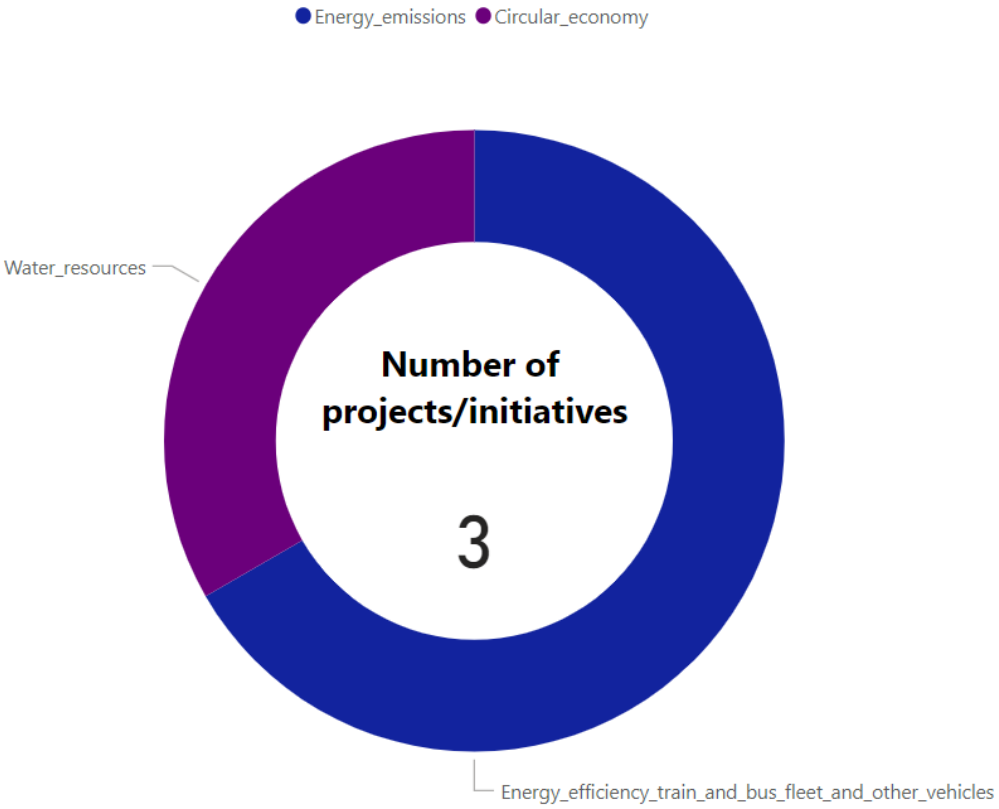
Comments on the trend

The increase in the quantity of special waste produced over the three-year period is due to the internalisation, as of 2021, of the management service for waste oils consumed on board ships, previously entrusted to the port authority.

In 2022, there is an overall reduction in the amount of generated waste compared to 2021, with opposite trends between hazardous and non-hazardous waste. In particular, hazardous waste decreased (about -56%) due to less extraordinary maintenance of ships in dock, while non-hazardous waste increased (about +67%) in light of more ships in operation than in the previous year.

The incidence of waste produced sent for recovery also increased to 92%.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)

Introduction of a zero emission in port ship with hybrid engines (diesel-electric) which will replace the ship RIACE	In progress	2025	Energy and emissions	- 3,133 tCO_2 (-16% total emissions of the Company compared to 2019 baseline for ferries)
Introduction of a zero emission in port ship with hybrid engines (diesel-electric) which will replace the ship Fata Morgana	In progress	2028	Energy and emissions	- 4,027 tCO_2 (-21% total emissions of the Company compared to 2019 baseline for ferries)

RFI subsidiaries

Blu Jet [4]

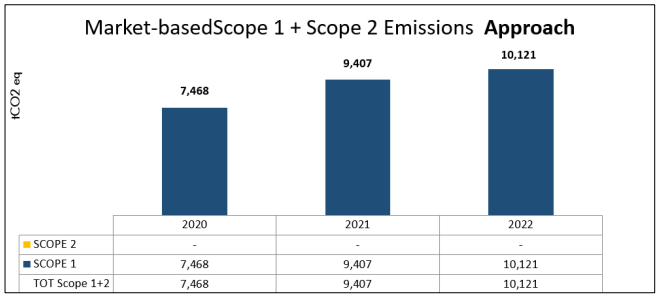
Final energy consumption

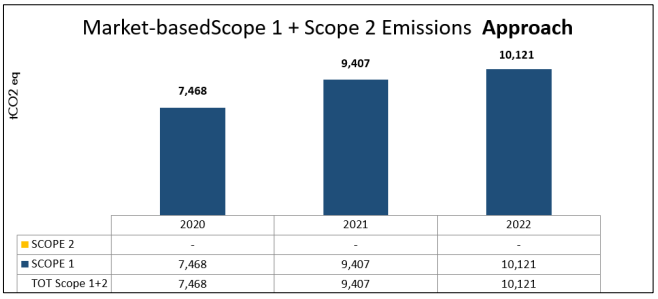
		2022	2021	2020
Diesel	l	4,322,809	4,017,822	3,190,143
Total consumption	**GJ**	**135,355**	**125,805**	**99,889**

Comments on the trend

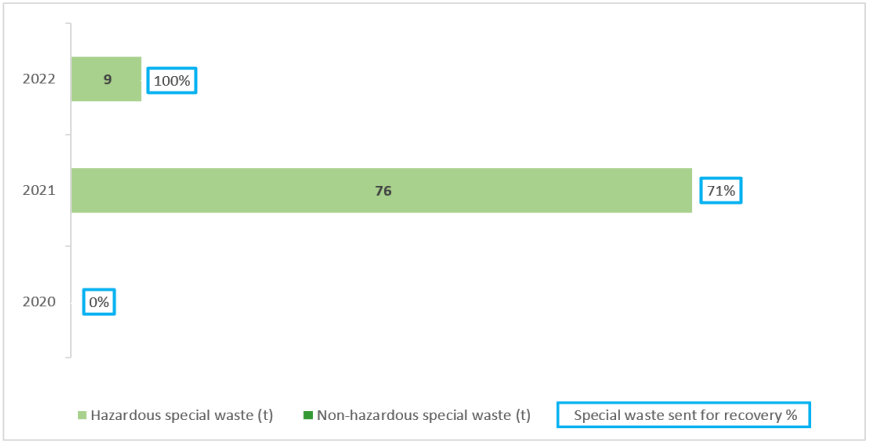
During the three-year period 2020-2022, diesel consumption shows an upward trend (about +36%), explained by a parallel increase in the number of ship runs. Notably, in 2022 there is an increase in diesel consumption of about +8% compared to 2021 due to an increase in trips, while in 2021 the increase is about +26% compared to 2020 due to the resumption of maritime traffic after the sharp slowdown during the Covid-19 health emergency.

Total CO_2 eq





Waste



Comment on the trend

In 2022, there is a significant decrease in the amount of special hazardous waste (approximately - 88%) as the management of port waste, particularly bilge water, has been reallocated to the Port Authority's appointed Manager.

All hazardous waste generated in 2022 is sent for recovery.

[4] The company, which began operating on 1st May 2019, was set up in August 2018, following the demerger of the Bluferries S.r.l. business unit.

Projects and initiatives

Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Replacement of the Mezzi Veloci fleet with BiFuel hybrid vessels, fuelled by LNG (liquefied natural gas) and diesel oil	In progress	2025	Energy and emissions	- 308 tCO_2 (-7% total emissions of the Company compared to 2019 baseline)

Italferr

OUR APPROACH

In line with the strategies of Gruppo FS, Italferr has been engaged for several years in the research of methodologies and protocols to enhance the sustainable choices of developed infrastructure projects. It has evolved in the way design development is done, integrating the more traditional engineering approach with a new perspective related to opportunities to generate value in the context.
With this in mind, Italferr, aware of the great contribution that engineering can make to reduceCO_2 emissions, has voluntarily chosen the UNI ISO 14064 standard for several years to apply a Carbon Footprint methodology, certified by a third party body, which allows the calculation of the project's climate footprint, becoming an effective operational tool to guide the designer in refining design solutions and to stimulate contractors, during the execution of the work, to acquire more sustainable construction materials.
In relation to this methodology, in 2022, the systematic use of CO_2 Fee Schedule, also integrated in STR Vision 4AS, was consolidated in order to have an automated inventory of CO_2 equivalent emissions related to materials, transport and processing produced during the construction phase of infrastructure works, thus enabling a rapid assessment of the climate change impacts of works. The CO_2 Fee Schedule has acquired the certificate of conformity to the ISO 14064 standard from the certification body within the scope of the audit involving the PFTE Lot 1b Romagnano - Buonabitacolo of the new Salerno Reggio Calabria High Speed Line. In pursuing virtuous choices in the construction phases of the work, particular attention was also paid to the management and reuse of excavated soil and rocks aimed at reducing CO_2 emissions into the atmosphere, also favouring the choice of storage areas for excavated materials close to the line to reduce site traffic. As part of integrating sustainability into the design of infrastructure, implementing new models and tools aimed at boosting stakeholder engagement is particularly important. Accordingly, the company worked on structuring a stakeholder engagement process in 2022 to create a broad support network throughout the regions touched by infrastructure projects. Involving stakeholders enables the identification of their expectations and needs by intercepting development opportunities in the territories. On the basis of these opportunities, new in-depth design studies can be oriented and an exhaustive narrative of the project constructed, in order to make people understand, through not strictly technical reading and dissemination, the role of the infrastructure as an active component of the processes of landscape transformation, redevelopment of the territory and development of new economic and social dynamics. Stakeholder engagement activities concretely support the design and realisation of sustainable infrastructures and are also instrumental in the public debate.
In addition, during the year specific sustainability studies and analyses were developed making it possible, thanks to the measurement of indicators, to enhance the benefits offered by infrastructure projects and their ability to generate value in terms of economic, environmental and social development of the territories. Sustainability reports of the works planned under the NRP were also carried out, basd on the *Guidelines for drafting technical and financial feasibility projects as a basis for public works contracts funded by the NRRP and the Complementary Fund*, in order to provide a clear overview of the potential of the infrastructure works to generate value for the community.

A key role is played by environmental design in order to improve the interaction of the project with the territory and the populations concerned. The company carries out specialised studies to check the projects' impacts on the environment and landscape and, more in general, to assess the direct and indirect effects that the construction of infrastructures could have. Furthermore, Italferr develops specific plans to identify material topics related to processing at sites, mitigation measures and monitoring to ensure proper control over the construction of works.

During the execution of the works, attention to the environment means having the contractors adopt specific environmental management systems that are provided for in the contract and complying with the requirements of the UNI EN ISO 14001 standard.
Italferr requires that the companies responsible for construction companies to plan and implement, for the entire duration of the works, an environmental management system for the on-site activities that provides the company and environmental protection authorities with objective evidence of the environmental controls performed in the course of the work by the contractor's qualified personnel.
Specifically, the environmental management system requires that, prior to the start of the works, contractors carry out an initial environmental analysis of site activities in the preparation of the environmental plan for the preparation of the work site. The analysis is meant to identify the significant environmental aspects to be managed during construction and to define the operating procedures for the site's correct environmental monitoring, in accordance with the applicable regulatory requirements.
Italferr constantly checks the actual implementation of environmental management systems by contractors through regular on-site monitoring.
The environmental management system is part of the integrated quality, environment,health and safety management system (ISO 9001, ISO 14001 and ISO 45001), which was successfully certified by the Quaser Certificazioni certification body again in 2022.

Lastly, the recent European Green Deal - the manifest of the new Europe envisaged by the President of the European Commission Ursula Von der Leyen - explicitly requires an innovation strategy that is rooted in the Sustainable Development Goals (SDGs) and harnesses sustainability and innovation as the most efficient way to overcome the challenges ahead. Italferr endorses a sustainability approach that encompasses innovation as a crucial lever to implement a new business model capable of generating value by exploiting the opportunities of digital transformation geared towards designing and building works in an increasingly integrated, efficient and automated manner.

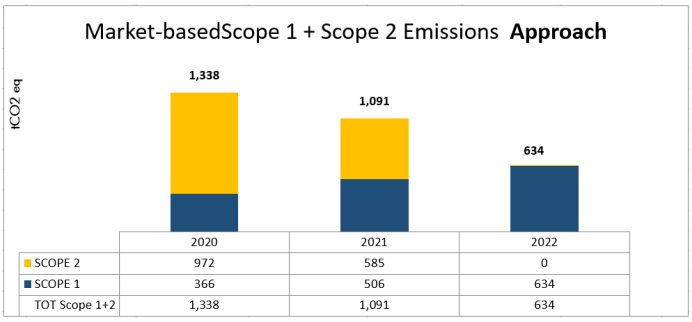
Final energy consumption

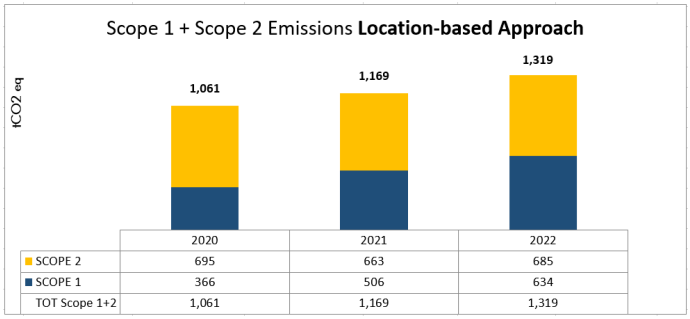
		2022	2021	2020
Electricity	MWh	2,616	2,368	2,321
of which from GO	*%*	*100%*	*47%*	*14%*
Diesel	l	209,641	164,351	116,025
Natural gas	Sm^3	26,945	22,326	20,584
Other consumption	GJ	243	287	192
Total consumption	**GJ**	**18,165**	**15,511**	**13,443**

Comments on the trend

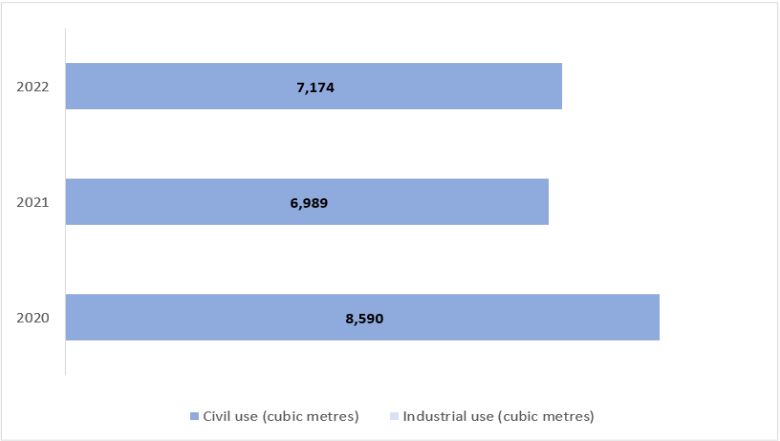
Over the three-year period, there was a gradual increase in consumption, mainly due to increased use of electricity and diesel. In 2022, electricity consumption increased by approximately 10% due to the increase in the company's staff and offices. Moreover, by now, all electricity consumed is acquired from renewable sources through contracts certifying the Guarantee of Origin (GO). In 2022, the increased presence on construction sites generated an increase of about 28% in diesel consumption, mainly used for motor vehicles and work vehicles/equipment. Finally, the share of natural gas used for heating also increased by 21% compared to 2021, due to an increased presence of staff on the premises, after two years influenced by a significant use of smart working.

Total CO_2 eq





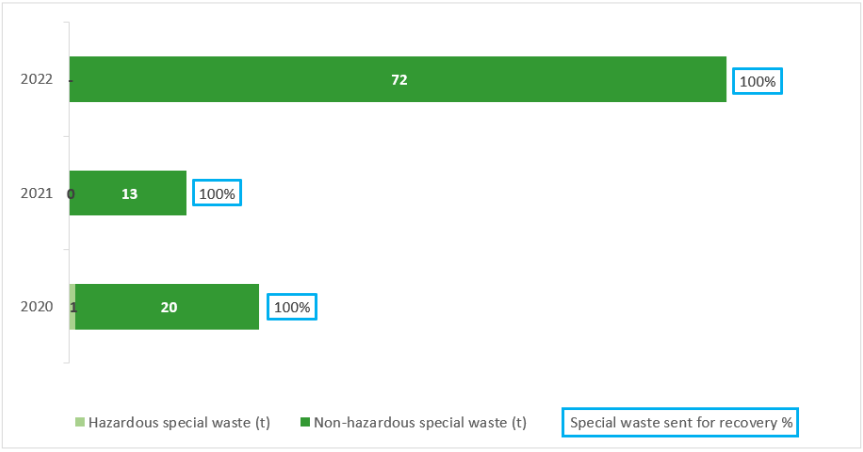
Water



Comments on the trend

The increase in water consumption, recorded in 2022, is linked on the one hand to the increase in personnel employed in the administrative offices and, on the other hand, to the gradual resumption of office activities, following the end of the state of emergency introduced during the pandemic period.

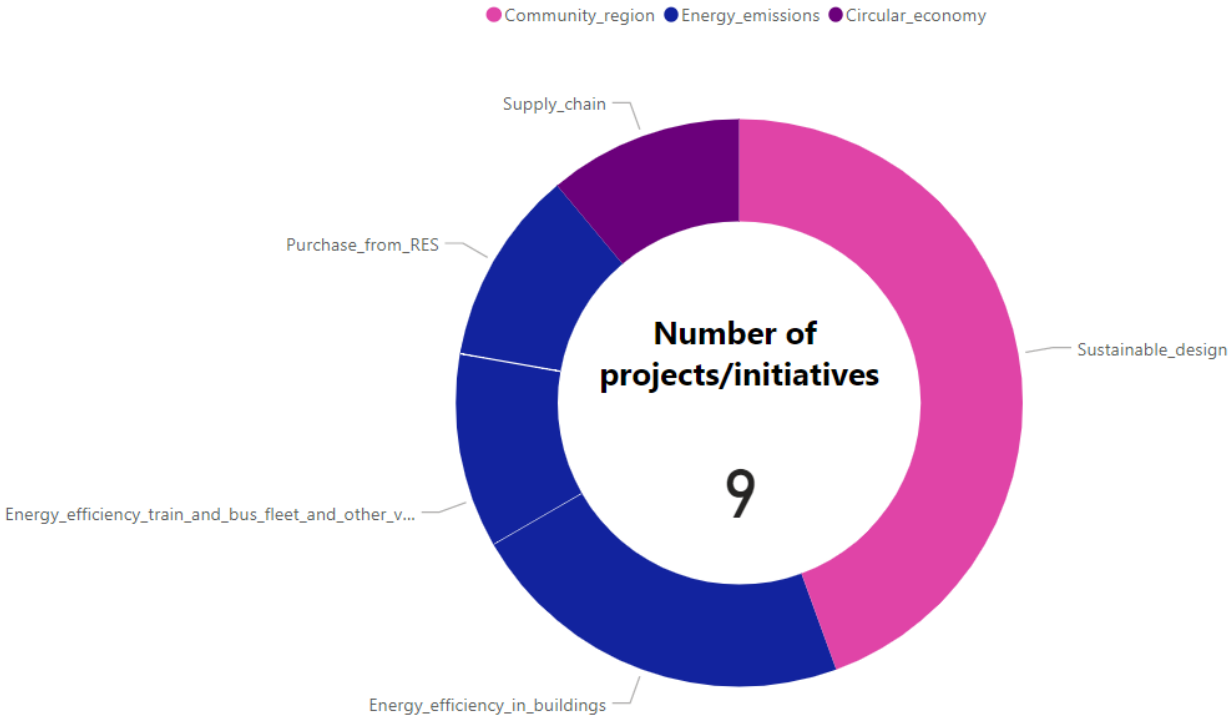
Waste



Comments on the trend

The deviation from previous years is justified by the opening of two new territorial offices (Genoa and Rome San Martino della Battaglia) and the disposal of obsolete office furniture. During 2022, paper waste from archives was also sent for recovery, following the start of the digitisation of documentation.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Integration of sustainability criteria and assessments for Group projects/initiatives	In progress	Ongoing activity	Community and territory	
Planning of stakeholder engagement activities to build solid relationships with local areas and develop opportunities for growth related to the works	In progress	Ongoing activity	Community and territory	
Measurement of the climate footprint of infrastructure projects, through the application of a methodology developed in accordance with UNI ISO 14064, certified by a third-party body, and Group initiatives through digital tools	In progress	Ongoing activity	Community and territory	
Purchase of energy from certified 100% renewable sources, which, when fully operational, will involve all utilities of Italferr offices	Completed	2022	Energy and emissions	- 546.39 tCO_2 (-100% Scope 2 market-based emissions)

Ferservizi

OUR APPROACH

In accordance with the guidelines in the sustainability governance model and the FS Italiane group's occupational health and safety guidelines and objectives and furthering its commitment to the integrated management of the requirements of major international standards, Ferservizi considers the quality of its services, the protection of the environment and the protection of occupational health and safety strategic elements in developing its business.
As part its goal of continuous improvement, Ferservizi is committed to pursuing:

- customer satisfaction by meeting agreed requirements, which it verifies through the appropriate monitoring and recording of feedback on customer satisfaction with services provided;
- the engagement, awareness and information of people through training and internal communication, to raise their awareness of the contribution that each can give;
- the definition of measurable objectives in line with company strategies, using the necessary means and resources for their pursuit;
- full compliance with the applicable legislation and, where possible, exceeding it by investing in people and protecting environmental resources;
- the involvement of the concerned parties so that they efficiently implement policies capable of spreading awareness among all workers;
- constant focus on the procurement chain, considering compliance with adequate technical and organisational requirements on occupation health and safety and their adequacy over time, in accordance with established standards and requirements, as necessary conditions for continuing the contractual relationship;
- the consolidation of a risk prevention culture to create healthy and safe work environments and promote responsible conduct, partly to pursue the group's objective of constantly reducing accidents;
- the rational and efficient use of natural resources and raw materials by reducing consumption and energy use, promoting the use of energies from renewable sources, the optimisation of the waste cycle and the prevention and reduction of pollution for the entire life cycle.

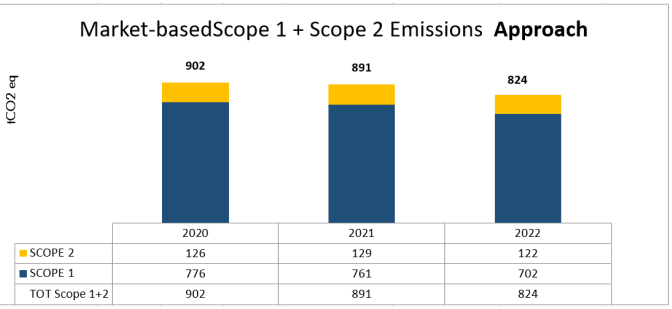
Final energy consumption

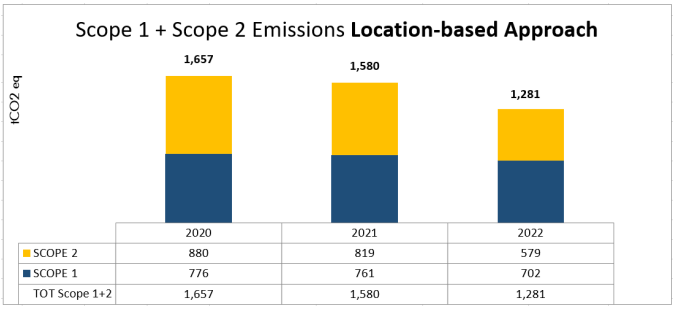
		2022	2021	2020
Electricity	MWh	1,845	2,547	2,574
with guarantee of origin or self-produced solar energy	*%*	*100%*	*100%*	*100%*
self-produced and consumed solar energy	*MWh*	*100*	*81*	*54*
Diesel	l	97,878	100,150	124,992
Natural gas	Sm^3	213,660	244,918	217,836
Other consumption	GJ	2,305	2,331	2,307
Total consumption	**GJ**	**19,813**	**23,520**	**23,564**

Comments on the trend

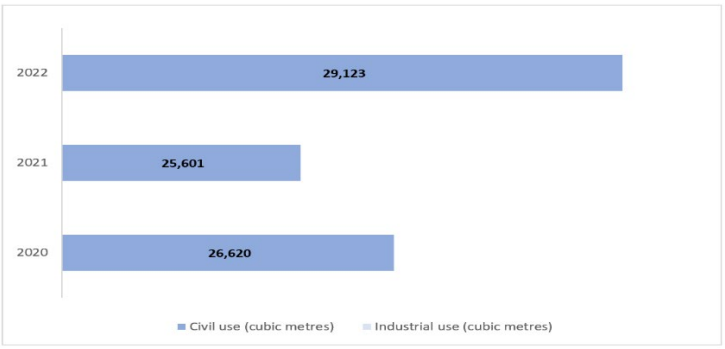
In 2022, consumption decreased significantly, mainly due to a lower use of electricity, as some utilities were turned over and passed on to other Group companies (e.g. RFI in Liguria). In 2022, the share of self-generated photovoltaic output and consumption increased as a result of the plants started up in 2021 becoming fully operational for the entire calendar year. Finally, there was a decrease in natural gas consumption compared to 2021, especially for the heating portion, as a result of both rationalisations in the winter season and the closure of Ferrotel in Mestre.

Total CO_2 eq





Water



Comments on the trend

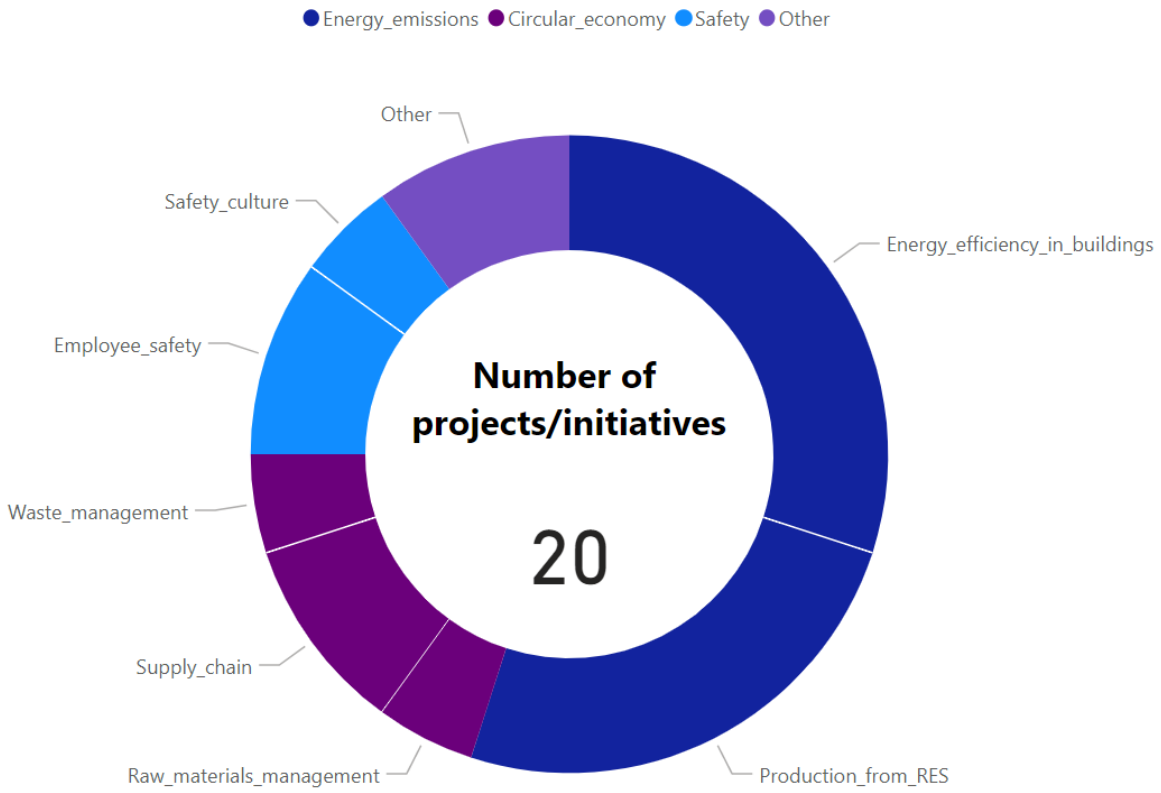
Compared to 2021, there is an increase in the volumes withdrawn for civil use of about 14% due to the activation of a new user and the gradual resumption of activities, both office and Ferrotel-related, following the end of the emergency pandemic state.

Waste

Comments on the trend

The deviation in the percentage of waste recovered compared to the previous year is due to the increasing trend to favour waste recovery over waste disposal. The increase in production values in 2022 is a consequence of the new framework agreements for environmental services, which have made it easier to resume the disposal of movable assets, which are no longer functional for the execution of activities.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Improvement of the acoustic, visual. lighting, heating and cooling comfort standards in Ferrotel rooms. Energy efficiency on three Ferrotel and simultaneous installation of photovoltaics	In progress	2026	Other	
Use of Smart Building system inside the headquarters to monitor consumptions in real time for the purpose of intelligent and flexible management of energy consumption with the installation of IoT systems in the offices involved in Smart Workplace projects	In progress	2023	Energy and emissions	
Construction of photovoltaic systems: - up to 20 kWp at the Bologna site - Milan Breda offices 20 Kwh - Ancona and Chiusi Ferrrotels: construction of photovoltaic plants (buildings not owned by the Group). Trieste Ferrrotel: construction of photovoltaic plants (building owned by the Group)	Planned	2023 -2025	Energy and emissions	- 35 tCO_2
As part of the Smart Workplace initiative, the following is planned: in Bari and Reggio Calabria offices, the optimisation of LED lighting system; the automation of summer and winter air conditioning systems; the installation of systems aimed at raising health standards in the workplace (e.g.: fan coils for existing fan coils, primary area changeover), also in order to mitigate the risk of disease spreading	Under evaluation	2025	Energy and emissions	- 7 tCO_2
As part of the SmartWork initiative at Mestre office, the optimisation of LED lighting system, plant automation and air conditioning is planned	In progress	2024	Energy and emissions	-4 tCO_2

Ferrovie del Sud-Est e Servizi Automobilistici

OUR APPROACH

FSE operates as both infrastructure operator and railway company. It manages 474 km of railway lines in the four southern provinces of Puglia, offering a widespread integrated rail and road service in over 130 municipalities in the region of Puglia.

In line with the FS Italiane group's strategic guidelines, FSE believes that the quality and sustainability of its services are essential to its business. The company's commitment is to improve its Quality and Occupational Health and Safety Management Systems, and to enhance its Environmental Management System (obtaining Certification in 2022), in order to achieve an integrated management of business processes in accordance with the requirements of the main international standards.

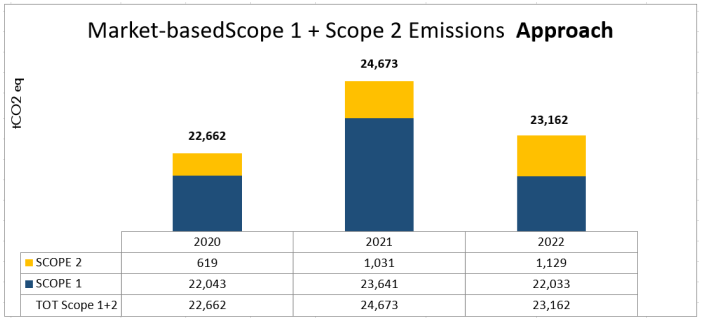
Final energy consumption

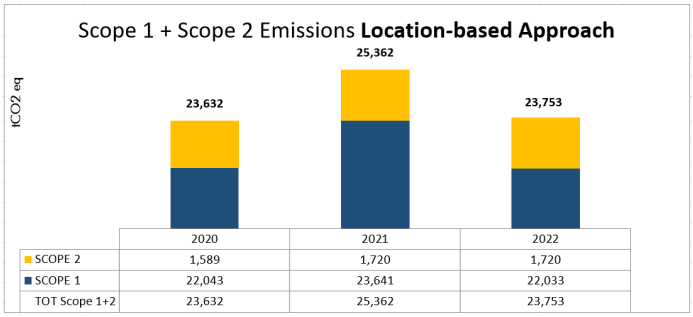
		2022	2021	2020
Electricity for railway traction	MWh	2,442	2,195	1,271
Electricity for other uses	MWh	4,127	3,953	4,035
with guarantee of origin or self-produced solar energy	*%*	*100%*	*100%*	*100%*
Diesel	l	7,924,754	8,546,151	7,957,754
Natural gas	Sm^3	42,324	35,117	37,144
Other consumption	GJ	0	0	188
Total consumption	**GJ**	**311,908**	**332,246**	**308,210**

Comments on the trend

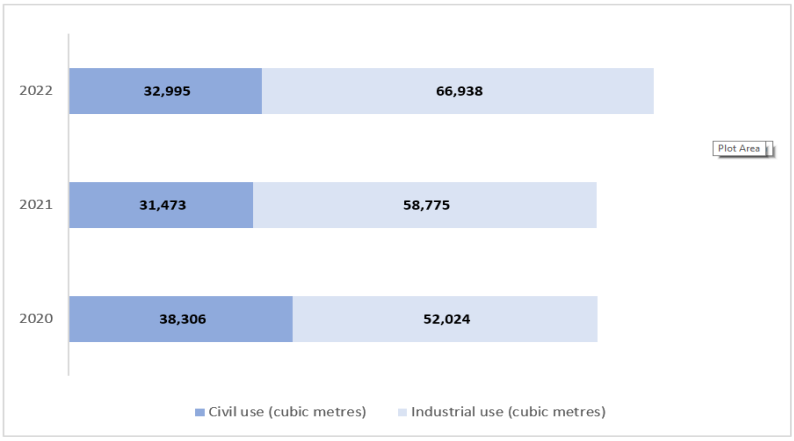
Overall energy consumption increased over the three-year period: from 2020 to 2021 due to the partial recovery of traffic and the increase in operations to support rail and car services, and then realigned in 2022 to the values recorded in 2020, following an optimisation of rail transport services. The consumption of electricity for railway traction further increased of 11% in 2022 due to the gradual rise in railway production using electric trains on the previous year. In 2022, diesel consumption on the contrary decreased, both due to optimised bus route management (e.g. reduction of empty bus-km) and a reduction of road transport in favour of rail transport. Finally, there is an upturn in the consumption of natural gas for heating in offices and workshops, linked to an increased presence in operational locations after the pandemic period marked by a significant use of smart working.

Total CO_2 eq





Water



Comments on the trend

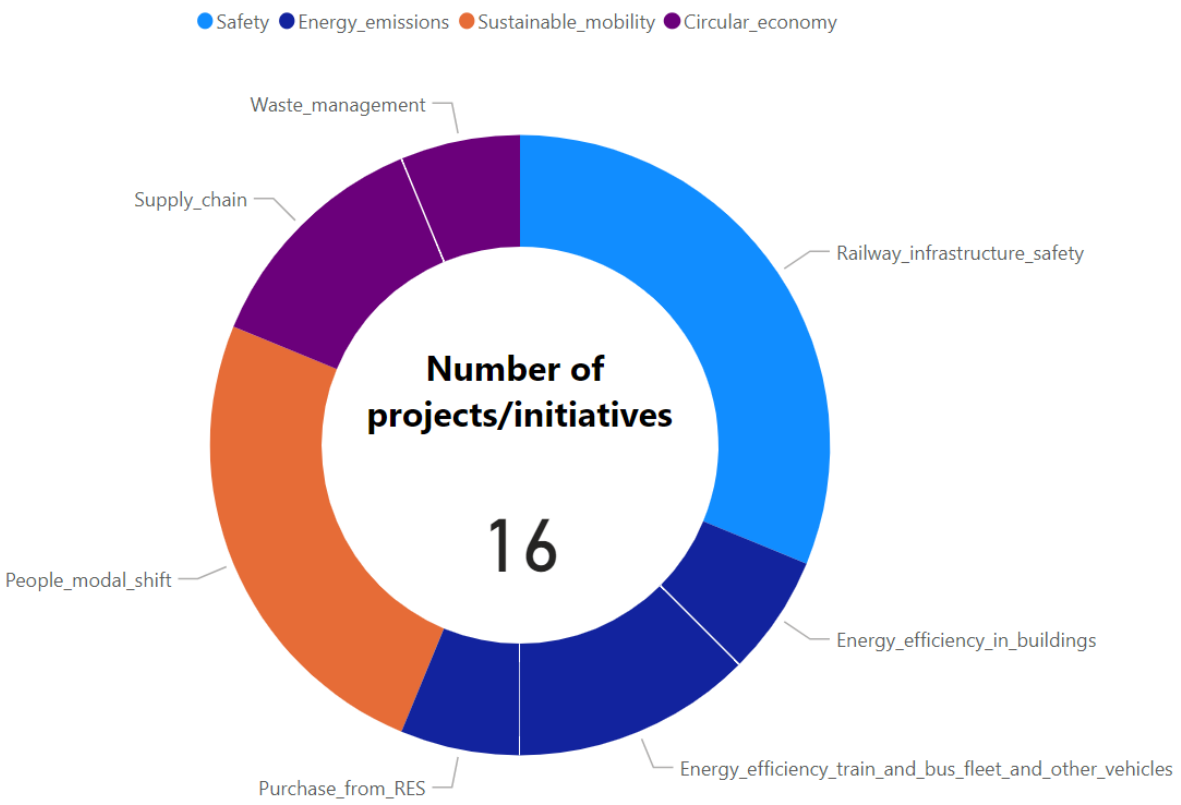
The consumption of water used by the company increased overall by about 10%. The increase is due to the gradual resumption of activities that were partially suspended for the pandemic emergency and to the increased use of water resources in industrial processes, particularly in rolling stock washing activities.

Waste

Comments on the trend

Waste production was reduced by 36% compared to the previous year. This decrease is mainly related to the reduction in the number of extraordinary maintenance works performed on the railway infrastructure during the year. The share of special waste sent for recovery increased by two percentage points compared to 2021.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Bringing the share of unsorted waste and waste sent for disposal down to zero.	In progress	2025	Circular economy	100% of waste sent for recovery/recycling/reuse by 2025.
Restoration of electrification of the Bari - Putignano (via Casamassima) - Martina F. line - Taranto (146.1 km out of 474 km of total line managed by FSE - 30.8%)	In progress	2024	Sustainable mobility	146.1 electrified km
3 kVcc electrification with rectification of interference and construction of Electrical Substations of the Martina F. - Lecce - Zollino - Gagliano, Maglie - Otranto Line.	In progress	2025	Sustainable mobility	186.1 km out of 474 km of total line operated by FSE - 39.2%
Construction of intermodal HUBs functional to the rail-road interchange areas, with elimination of architectural barriers, installation of electric charging columns and photovoltaic panels on the parking area roofs. The intervention falls under Measure M3C1 of the NRP	In progress	2026	Sustainable mobility	20 HUBs
Purchase of 36 electric trains (five already in operation in 2019, the others progressively from 2020 to 2027). In addition to the reduction in emissions, a 16.1% increase in seats/pax on rail is also expected (36 trains out of a total of 51 in the FSE fleet - 70.6%)	In progress	2027).	Energy and emissions	Reduction 4,052 tonnes CO_2/year (- 41% from baseline 2019) -
Total purchase of 579 Euro 6 buses over the Plan period. Specifically, 270 buses, with EURO 6 engines, (270 out of a total of 350 (2019 figure) – 77.1 % of the Total FSE Fleet), gradually replacing EURO 6 vehicles. Moreover, the new additions (net of replacements over the years), will allow the fleet to increase (from 2027) of 548 buses and consequently a 22% increase in bus*km (target of 20 mln bus-km per year)	In progress	2032	Energy and emissions	440 tonnes$_{CO2/year}$(-5% from baseline 2019)

Anas

OUR APPROACH

Anas SpA considers sustainable development a crucial aspect when taking decisions about how to operate the roadway and motorway network. It believes in protecting the land, the habitats and landscape and striving for innovation in new methodologies for the designing, processing, recovery of materials and, in general, protecting the environment.
Anas carefully assesses all impacts and promotes the adoption of criteria, guidelines and procedures to reduce the environmental impact of its activities by: upholding the principles of environmentalism and the responsible use of resources in the planning stages, with the design of projects that integrate environmental protection and enhancement; when setting up new work sites, controlling and monitoring the environmental impacts of its work sites and optimising the consumption of raw materials and natural resources; in operations, reducing and optimising energy consumption; adopting the most advanced solutions to reduce noise pollution by installing noise-dampening barriers and using noise-dampening asphalt, in compliance with the national noise containment and mitigation plan.
By continuously improving its environmental performance, Anas recognises that it achieves significant advantages, minimising all the adverse environmental impacts of its activities wherever feasible and economically sustainable.

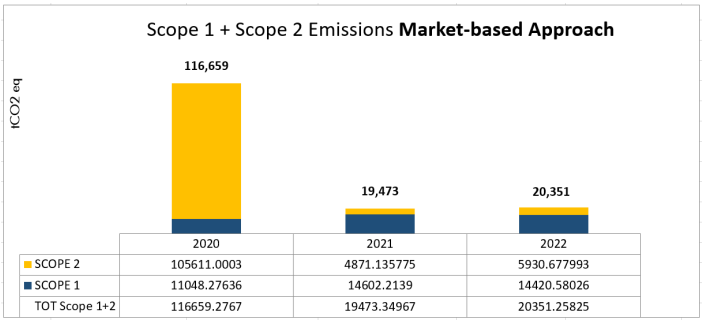
Final energy consumption

		2022	2021	2020
Electricity to light roads and tunnels	MWh	351,480	345,901	351,732
with guarantee of origin or self-produced solar energy	*%*	*96%*	*97%*	*40%*
Self-generated electricity from photovoltaics	*MWh*	*242*	*202*	*101*
Electricity for other uses	MWh	13,843	12,630	12,079
with guarantee of origin		*99%*	*100%*	*44%*
Diesel	l	4,379,936	4,591,817	3,643,474
Natural gas	Sm^3	474,675	501,084	504,277
Other consumption	GJ	23,394	17,456	3,731
Total consumption	**GJ**	**1,513,223**	**1,491,144**	**1,462,303**

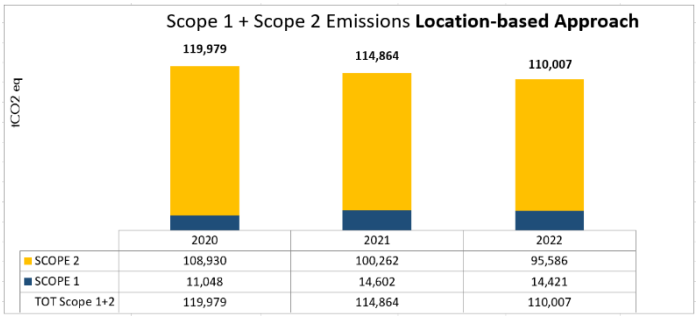
Comments on the trend

There was a slight increase in overall consumption over the three-year period. The trend is more or less stable in relation to electricity consumption for road and tunnel lighting, while there is an increase of about 9.5% per cent for other uses due to the new utilities of Strada dei Parchi, which recently took over management of Anas. On average, the share of energy from Guarantee of Origin covers almost all electricity consumption. For electricity consumption related to street and tunnel lighting, the contribution from self-generation is increasing, thanks to the restoration of the photovoltaic plant in Lissone. There is also a decrease in diesel consumption of about 4.5% compared to 2021, mainly due to the reduced use of gensets in tunnels. The consumption of natural gas (for heating and vehicle fuelling) also fell by 5.2%, mainly as a result of lower use of the natural gas vehicle fleet, but also optimisation of consumption in buildings

Total CO_2 emissions

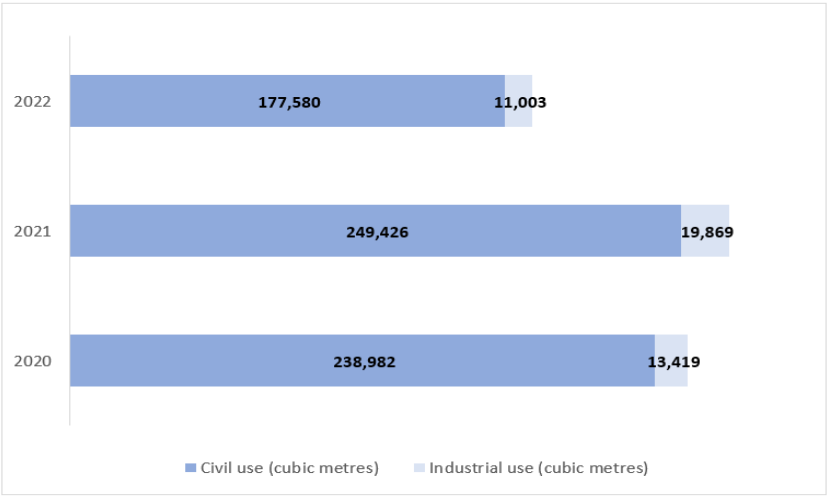


	2020	2021	2022
SCOPE 2	105611.0003	4871.135775	5930.677993
SCOPE 1	11048.27636	14602.2139	14420.58026
TOT Scope 1+2	116659.2767	19473.34967	20351.25825



	2020	2021	2022
SCOPE 2	108,930	100,262	95,586
SCOPE 1	11,048	14,602	14,421
TOT Scope 1+2	119,979	114,864	110,007

Water



Comments on the trend

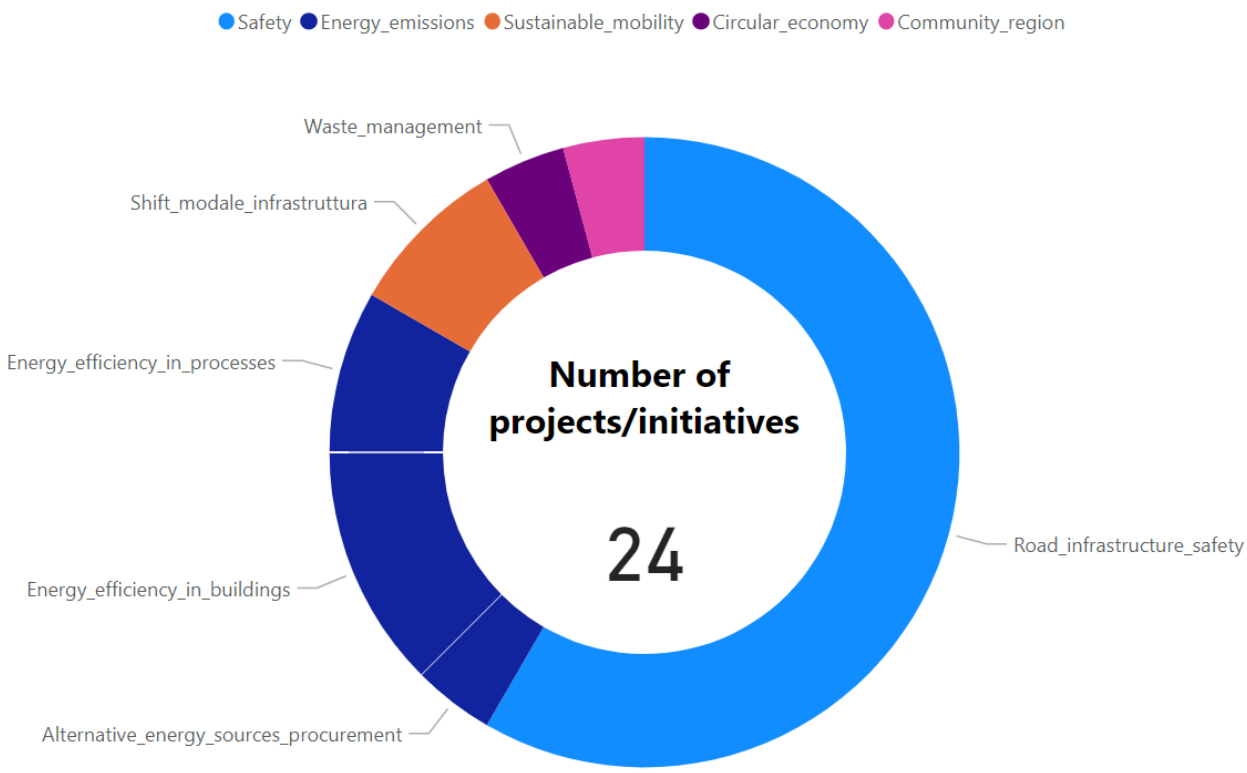
The adoption of measures to streamline the water networks, together with those aimed at optimising the water cycle, led to a reduction of around 29% in the volume of water for civil use compared to the previous year. There is also a decrease of about 45% in the consumption of water withdrawn for industrial use compared to 2021, related to the reduction of vehicle fleet's wash activities.

Waste

Comments on the trend

Compared to the previous reporting year, there was a 12% decrease in the amount of special waste produced. This reduction is essentially linked to a general contraction in the extraordinary cleaning of road surfaces. The decrease in the percentage of waste sent for recovery, out of the total waste generated, is related to the disposal of waste generated by specific new maintenance activities carried out in certain regions.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Extension of the Dynamap system for dynamic noise mapping on significant sections of the Anas network	In progress	2025	Community and territory	
Design, prototyping and validation of an ECO-Friendly road safety barrier in recycled rubber	In progress	2025	Circular economy	
Mitigation techniques for noise and air pollution through the introduction of tree essences inoculated with hydrocarbon-degrading bacteria in controlled environments, through the project Ecoroads: innovative barriers for mitigation of noise and chemical pollution from roads	In progress	2023	Energy and emissions	
Achieving an improved building energy efficiency parameter of at least two classes in a maximum period of three years starting from the classes identified by the Energy Performance Certificates drawn up by the Territorial Facilities on all Anas Offices.	In progress	2024	Energy and emissions	1.8 m €/year
Energy efficiency and plant upgrades through a set of actions aimed at optimising the factors that affect energy consumption, thus reducing waste and improving the use of energy vectors	In progress	2026	Energy and emissions	4.88 m €/year
Implementation of a platform (Ecodrive: eco-driving to reduce vehicular emissions) capable of automatically controlling and managing traffic to mitigate polluting emissions in real time in the areas crossed by road infrastructures in the periods strictly necessary	In progress	2027	Energy and emissions	

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Extension of the Green Light project, with implementation of highly innovative plant engineering solutions featuring high energy efficiency. Possibility of monitoring in real time the main energy vectors of the tunnel system. Increased user safety and comfort. Reduced energy consumption and CO_2 production	In progress	2028	Energy and emissions	Average cost savings of 10.71 mln €/year from 2028
Experimentation of the Eco Green Bus Wireless Charging system. The system plans to put electromagnetic induction wireless energy transmission under the road surface, capable of directly powering electrically driven vehicles and recharging vehicle battery systems, promoting the spread of e-mobility systems	In progress	2028	Sustainable mobility	
Initiation of preventive maintenance projects, carried out at preset intervals or in accordance with criteria prescribed in maintenance plans, to reduce the probability of failure or degradation in the operation of an asset or plant. It concerns all those activities that allow the current operation of a system to be recognised, in order to take the necessary steps to slow down normal degradation. Preventive maintenance allows: remote management of the tunnel, activation of emergency scenarios, support of plant maintenance and management of the plant registry. Through the use of a set of technologies, sensors and management systems, based on artificial intelligence algorithms, knowledge of the state of functionality and efficiency of tunnel and open-air facilities will be increased, with the aim of optimising maintenance operations by minimising the unavailability of essential elements for safe traffic on the roads under their jurisdiction	In progress	2025	Safety	

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
SHM platform bridges and tunnels: big data platform for monitoring the health of the works (bridges and tunnels) over time: - processing and analysis of big data (e.g. AI, predictive analysis, etc.); - Remote sensor control (sensor operating status check and remote reboot) - Viewing the results of continuous monitoring - Cartographic component - Integrations with legacy systems: SAP IAM, BMS 2.0, etc.	In progress	2032	Safety	
Anas Smart Road: a smart road for secondary extra-urban roads with a mix of different technologies fitted with a broadband network that enables ultra-fast connectivity. Medium and low coverage of sensors and technologies. Communication technology between vehicle and infrastructure and between infrastructure and users in selected sections and points. The user will enjoy all infomobility services (via an App) from a single Smart Platform, with the aim of supporting them in driving and improve road safety. Areas known as Green Islands may be provided at strategic points for charging electric vehicles and for generating energy from renewable sources, as well as for hosting the technologies for processing and storing the data generated by the Smart Road.	In progress	2028	Safety	4.700 km
Safety and traffic control through the installation of the Vergilius system on the entire motorway network and Anas junctions	In progress	2028	Safety	
The REG project (Green electric charging) involves installing an electrical infrastructure near roadman houses (350 columns), for powering charging systems, including fast ones, with the possibility of using energy produced from renewable sources.	to implement	2029	Sustainable mobility	
SHM platform bridge deployment (5,000 bridges)	In progress	2031	Safety	5.000 bridges by 2031
Tunnel 4.0: will make it possible to implement a number of advanced management measures through the use of existing devices (e.g. traffic lights, lane indicators, variable message boards,	In progress	2032	Safety	

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
radio communication systems) and the installation of advanced sensors (e.g. temperature sensors, air quality sensors, vehicle detection sensors, dangerous goods analysis via CCTV). The signals from the sensors in the field and information on the status of the equipment are sent to a SCADA (supervisory control and data acquisition system) that generates a real-time risk analysis of the tunnel and determines, in the presence of an emergency event, the most suitable operating scenario. Before exceeding an acceptable threshold, the system identifies the maintenance operations to be scheduled, averting more invasive operations that would cause the unavailability of the infrastructure for a longer period.				
DSMU project: Anas Universal Motorcyclist Safety Device for Discontinuous Safety Barriers	Completed	2023	Safety	

Busitalia-Sita Nord

OUR APPROACH

The **sustainability policy** adopted by the sub-holding Busitalia (Busitalia - Sita Nord and its subsidiaries) in January 2021 sets out the principles to be pursued to manage impacts responsibly in line with Gruppo Ferrovie dello Stato Italiane strategies in a management system covering all operating sites.

Busitalia **sustainable activities** are broken down into seven commitments including passenger safety, contributing to more inclusive, resilient and sustainable cities, improving air quality and environmental performance, developing quality infrastructure, listening to the local community and enhancing employees.

Specifically, Busitalia channels its commitment into **fighting climate change**, upgrading to a more environmentally-friendly fleet, promoting **efficient use** of energy resources and **sustainable management** of water resources, carrying out energy saving upgrades and procuring energy from renewable sources.

This report is a way of communicating with the communities served by Busitalia, as an integral part of the strategy developed by the FS Italiane Group.

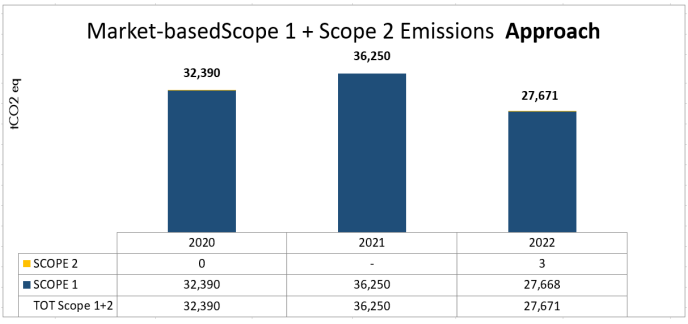
Final energy consumption

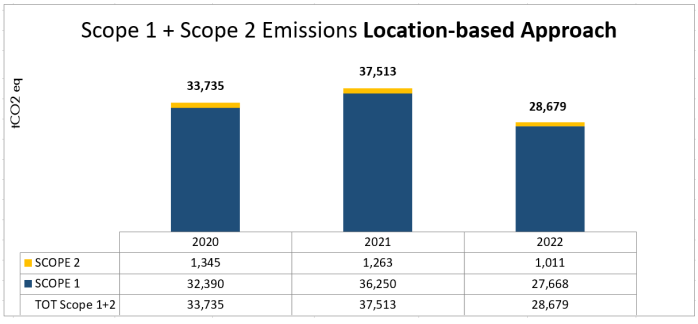
		2022	2021	2020
Electricity	MWh	3,860	4,514	4,490
with guarantee of origin	*%*	*100%*	*100 %*	*100 %*
Diesel	l	9,268,172	11,923,364	10,712,244
Natural gas	Sm^3	1,220,103	1,946,453	1,671,367
Other consumption	GJ	23	22	16
Total consumption	**GJ**	**390,508**	**513,172**	**459,996**

Comments on the trend

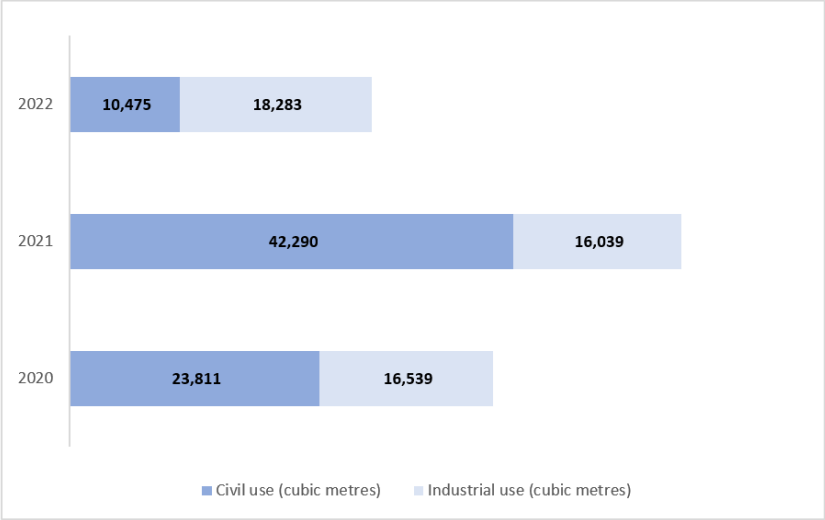
Over the three-year period, overall consumption peaked in 2021 due to the partial recovery of traffic following the restrictions of the health emergency, which had mainly characterised 2020. In 2022, electricity consumption was reduced by about 15% compared to 2021, mainly as a result of energy efficiency and energy-saving activities in buildings. The overall diesel share also decreased by 22%, notably the share for road transport following the divestment of the Tuscany Regional Office. Finally, there has been a drastic reduction in the use of natural gas for local public transport services, the consumption of which has fallen by around 37% compared to 2021.

Total CO_2 eq





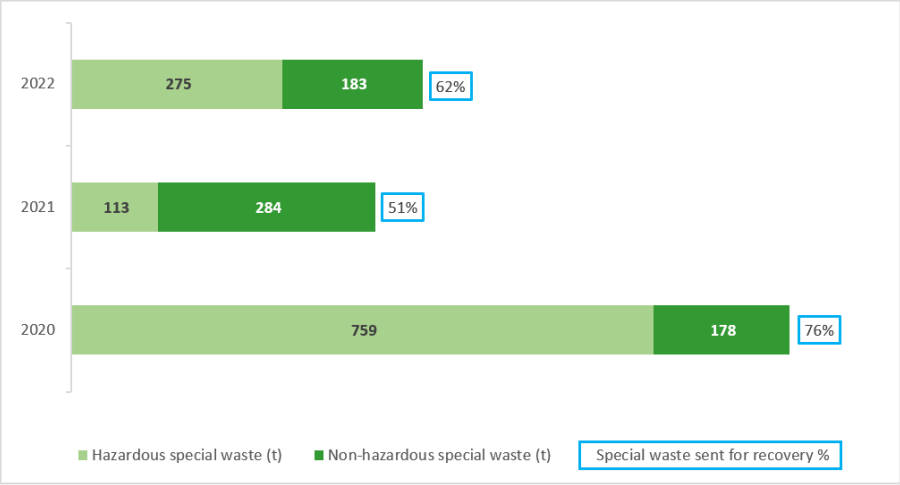
Water



Comments on the trend

The company's water consumption was reduced by a total of 51% compared to the previous year, and by about 29% compared to 2020. The strong reduction depends on the termination of the LPT road service in Tuscany in November 2021, which will result in the total elimination of water supply for industrial use and the considerable downsizing of water supply for civil use. In Umbria, on the other hand, water consumption remained constant compared to the previous year.

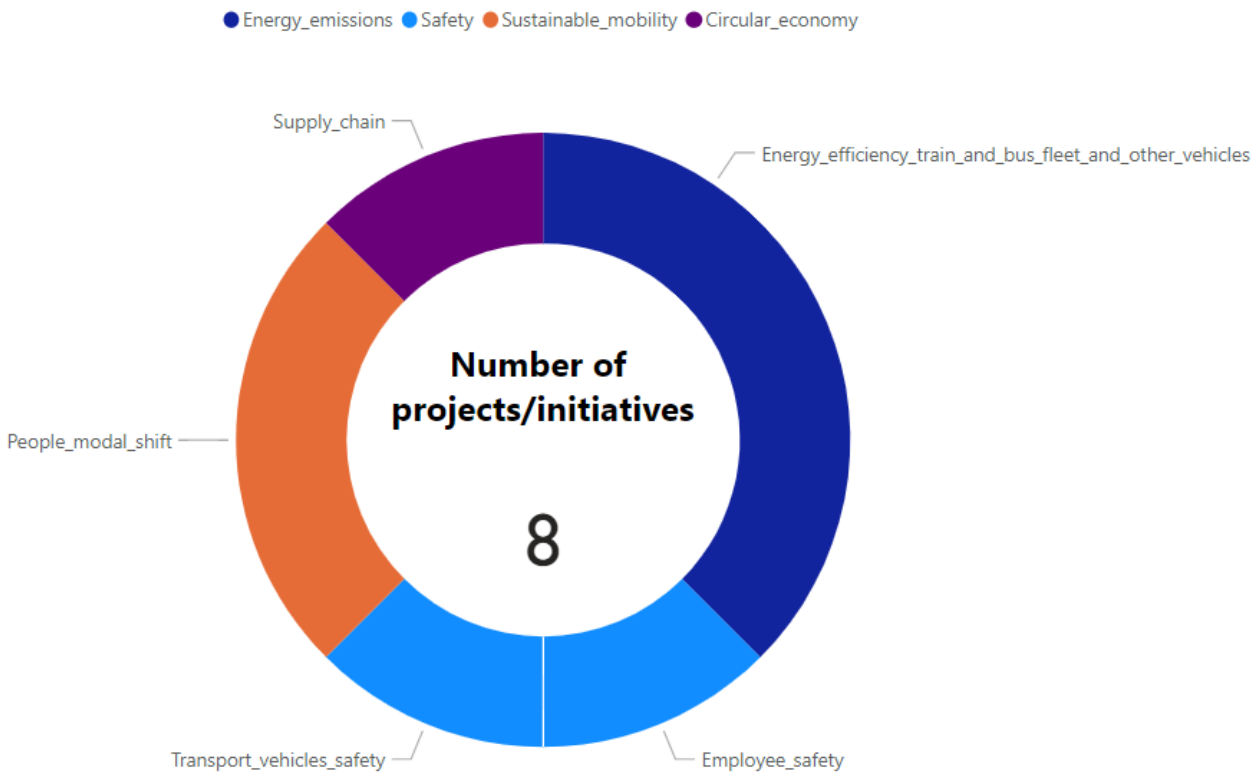
Waste



Comments on the trend

Following the end of the LPT road service in Tuscany in November 2021, the related waste production was reduced to zero. At the same time, Umbria recorded an increase in the production of hazardous special waste, following the start of an extraordinary campaign of obsolete vehicles sent for recovery. The production of special non-hazardous waste in Umbria remained instead almost constant compared to the previous year.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
ENI - FS partnership to test the use of Hydrotreated Vegetable Oil (HVO) as a replacement for traditional diesel on various types of vehicles. This type of fuel is produced to a large extent from waste raw materials, residues and waste resulting from the processing of plant products or crops that do not compete with the food chain	Under evaluation	2023	Energy and emissions	
Installation of active and passive safety systems on Busitalia vehicles. All new Busitalia vehicles will be equipped with common driving safety aids (e.g. ABS, ESP, ASR, etc.).	In progress	By 2024	Safety	100% of new vehicles
Installation of defibrillators in all company offices and at the main bus stations and LPT interchanges	In progress	By 2027	Safety	one device per site and per bus station
Addition of 466 buses (69 diesel, 45 natural gas, 137 electric, 85 hybrid and 130 hydrogen)	Planned	By 2032	Energy and emissions	10.000 tCO_2/year savings compared to 2019 baseline (-41% in terms of $grCO_2$ /km)

Busitalia - Sita Nord subsidiaries

Busitalia Veneto

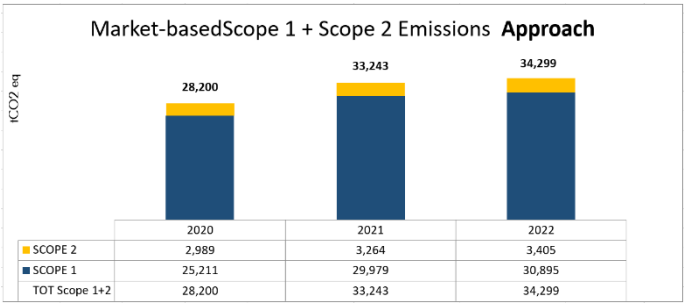
Final energy consumption

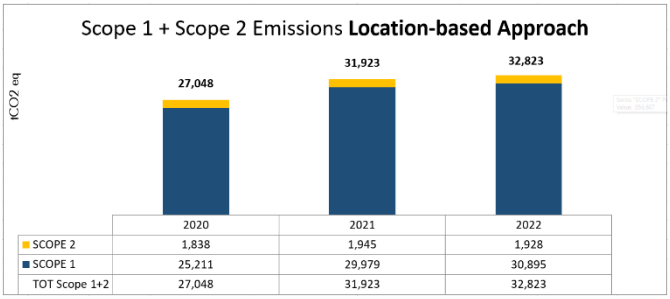
		2022	2021	2020
Electricity	MWh	7,364	6,950	6,135
with guarantee of origin or self-produced solar energy	*%*	*0%*	*0 %*	*0 %*
Diesel	l	8,799,086	8,645,803	7,510,340
Natural gas	Sm^3	3,635,598	3,394,253	2,523,875
Other consumption	GJ	77	89	426
Total consumption	**GJ**	**469,447**	**453,651**	**380,245**

Comments on the trend

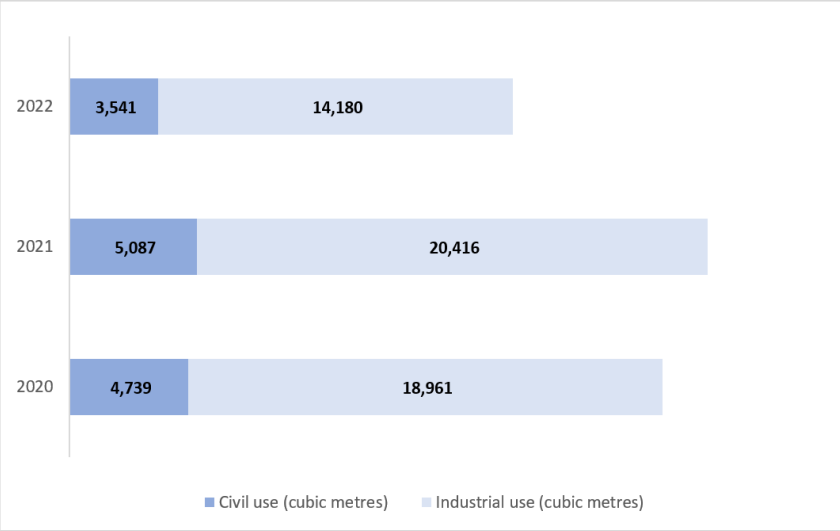
During the three-years period, energy consumption increased mainly for use in local public transport services (+8% compared to 2021), as a result of production increases. The figure for diesel remained stable, although the contribution of EURO 6 vehicles increased significantly (+66% compared to 2021), following the progressive modernisation of the bus fleet. Finally, there has also been an increase in gas consumption, particularly the share related to public road transport.

Total CO_2 eq





Water



Comments on the trend

The reduction in water consumption compared to previous years is attributable to a widespread lower use of water resources, both for civil and industrial use.

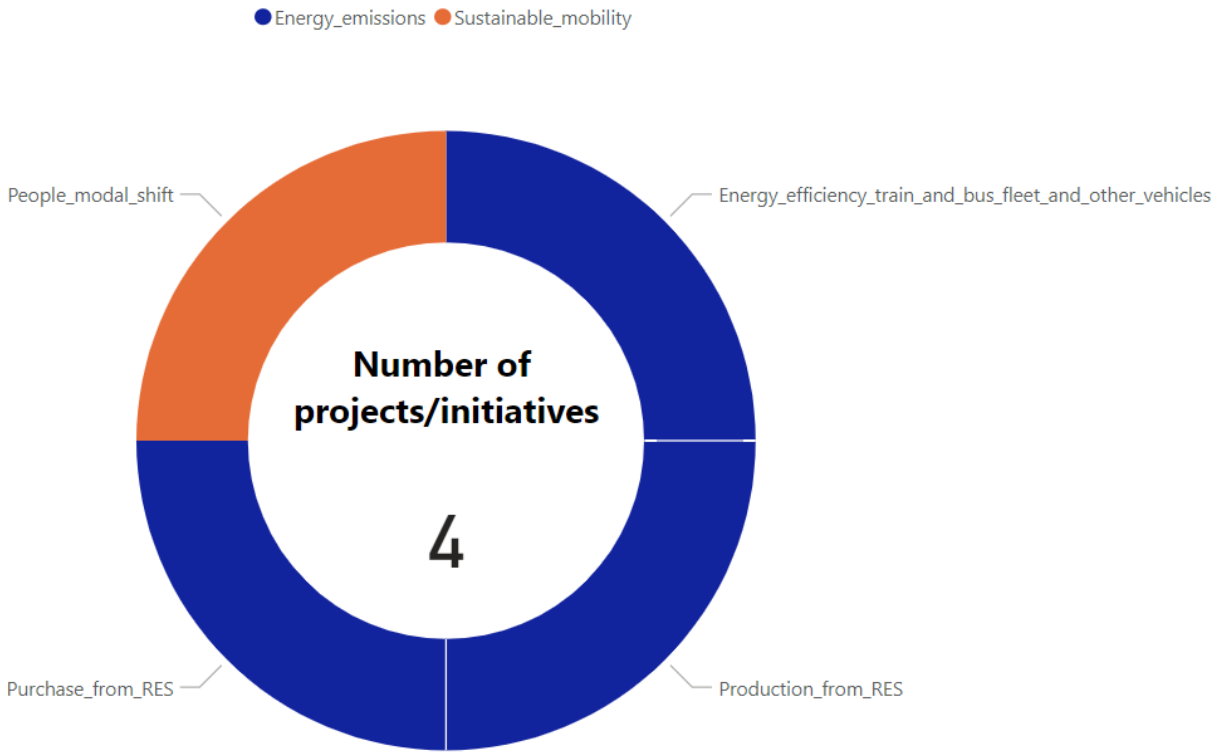
Waste

Comments on the trend

The change in hazardous waste generation, compared to 2021, is mainly attributable to the lower scrapping of end-of-life vehicles.

Secondly, less aqueous liquid waste, ferrous scrap and non-ferrous metals contribute to the reduction.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Addition of 387 buses (107 diesel, 104 natural gas, 116 electric, 60 hybrid) and simultaneous decommissioning of the same number of diesel vehicles	Planned	2032	Energy and emissions	4,000 tCO_2/year savings starting from 2032 compared to 2019 baseline (-20% in terms of $grCO_2$ /km)

Busitalia - Sita Nord subsidiaries

Busitalia Campania

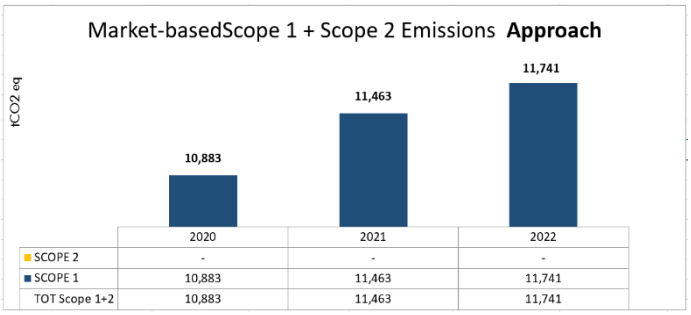
Final energy consumption

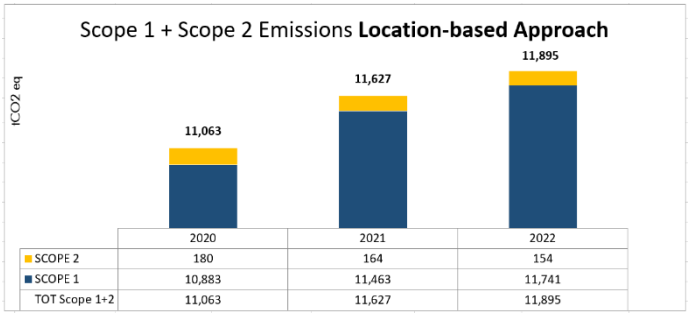
		2022	2021	2020
Electricity	MWh	588	587	601
with guarantee of origin	%	100%	100 %	100 %
Diesel	l	4,245,489	4,026,769	3,554,352
Natural gas	Sm^3	170,744	324,573	670,281
Total consumption	**GJ**	**161,497**	**158,633**	**153,487**

Comments on the trend

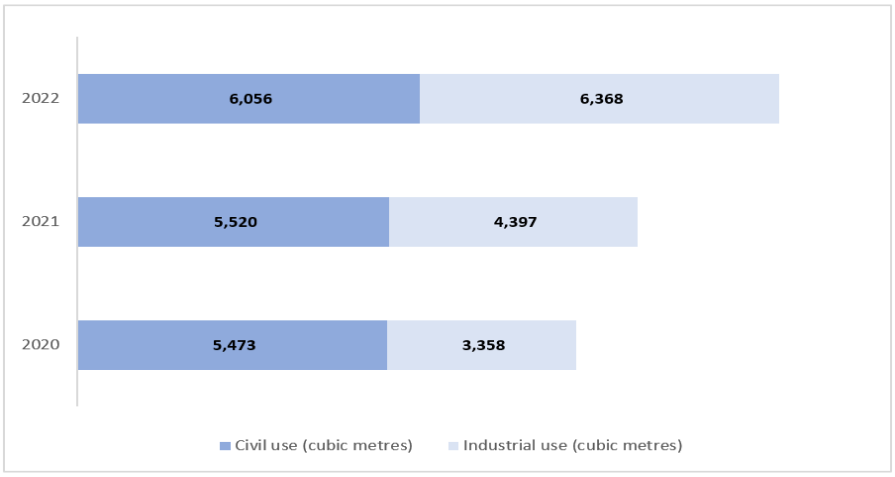
Overall consumption in the three-year period increased slightly, mainly due to the increased use of diesel for bus fleet implementations. Electricity consumption, completely supplied from renewable sources certified by Guarantees of Origin (GO), remained almost constant in 2022. On the other hand, there was an increase in diesel consumption due to an increased number of EURO 6 vehicles for public transport services (14 additional units), replacing natural gas vehicles whose consumption was drastically reduced.

Total CO_2 eq





Water



Comments on the trend

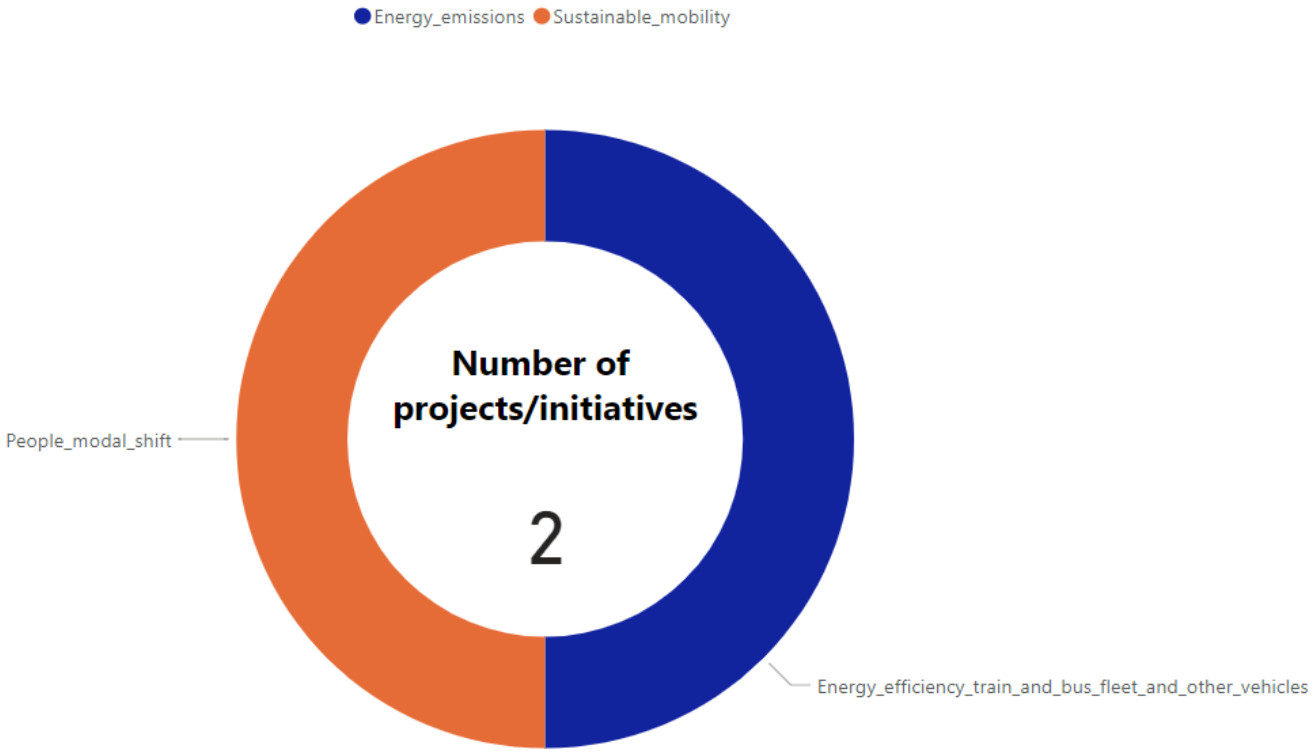
The increase in industrial water consumption is mainly related to the increase in industrial activities connected with the cleaning and care of vehicles.

Waste

Comments on the trend

In 2022, the company completed the process of outsourcing bus maintenance activities and, as a result, the relating (hazardous and non-hazardous) waste production decreased. At the same time, the decommissioning of obsolete and out-of-service buses, replaced by new ones, generated a large amount of hazardous waste (end-of-life vehicles), which reversed the negative trend described above.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Addition of 110 buses (75 electric, 25 natural gas, 10 diesel) - an increase in mileage of 2.5 mln km (+20%) is expected, as well as 89 vehicles for hire (78 natural gas and 11 diesel)	Planned	2032	Energy and emissions	Savings of 1,000 tCO_2 /year from 2032 compared to baseline 2019 (-12% in terms of gCO_2 /km)

Busitalia - Sita Nord subsidiaries

Qbuzz

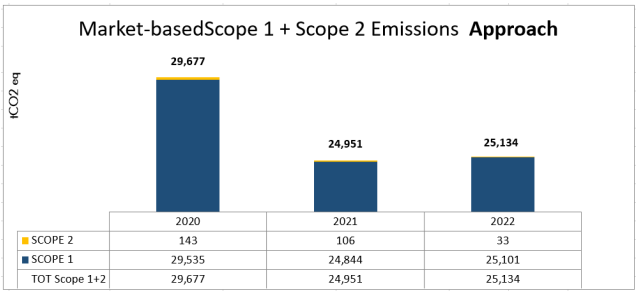
Final energy consumption

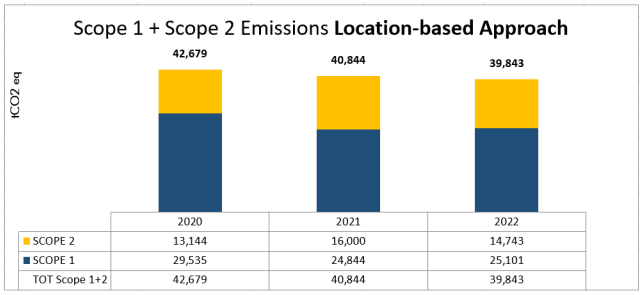
		2022	2021	2020
Electricity	MWh	39,102	34,999	28,325
with guarantee of origin or self-produced solar energy	*%*	*100%*	*100%*	*100%*
self-produced and consumed solar energy	*MWh*	34	*46*	*40*
Diesel	litres	8,782,374	9,043,751	10,774,266
Biodiesel	litres	6,474,029	6,162,225	6,479,672
Natural gas	Sm^3	64,105	66,425	70,451
Hydrogen	t	108	53	0
Other consumption	GJ	2,837	4,462	5,255
Total consumption	**GJ**	**716,750**	**694,476**	**739,257**

Comment on the trend

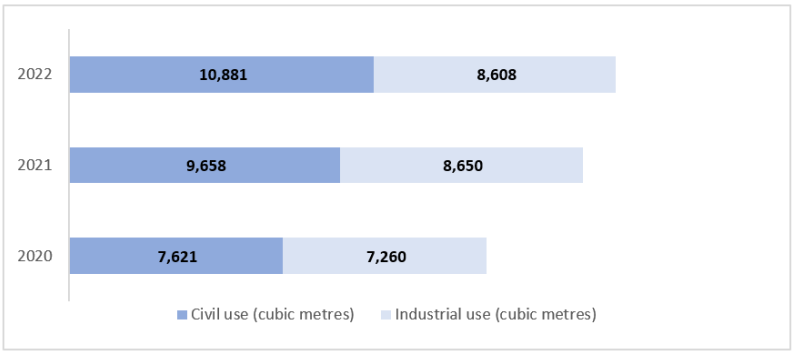
Over the three-year period, energy consumption decreased in 2021 due to the pandemic emergency, but decreased overall between 2020 and 2022. In 2022, the increase in electricity consumption of 12% over the previous year is mainly due to an increase in the mileage of electric vehicles serving local public transport. The consumption of biodiesel increases slightly, returning to 2020 consumption levels as traffic picks up, while the use of diesel (which includes a share of GTL) undergoes a further decrease linked to the gradual replacement of bus fleets with electric and hydrogen-powered vehicles; in fact, the use of hydrogen increases significantly, doubling the value recorded in 2021.

Total CO_2 eq





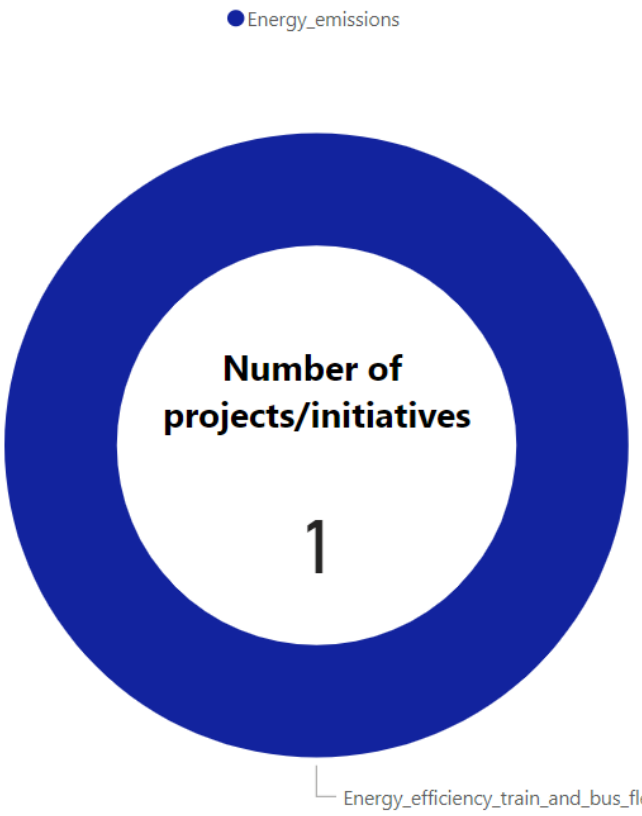
Water



Comment on the trend

The total water withdrawal in 2022 confirms the increasing trend of previous years. Specifically, the consumption of water for domestic and sanitary use increased as new users were taken into account.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Addition of 625 buses (615 electric, 10 hydrogen) and simultaneous decommissioning of the same number of diesel buses	In progress	2032	Energy and emissions	Reduction of 61.000 tCO2/year compared to 2019 baseline (-100% total emissions, -100% in terms of gCO_2 /km)

Mercitalia Logistics

OUR APPROACH

In accordance with the guidelines of Gruppo FS Italiane sustainability policy and its occupational health and safety action areas and furthering its commitment to the integrated management of the requirements of major international standards, Mercitalia Logistics S.p.A. considers the quality of its services, the protection of the environment and the protection of occupational health and safety strategic elements in developing its business.

The company's commitment to the environment can be seen through the use of the railway as the preferred mode of transport in its provision of integrated logistics services, thereby gaining an advantage in terms of sustainable mobility and reducing emissions. It confirmed this sensitivity to environmental issues in the installation - back in 2007 – of a photovoltaic power station at the Rome San Lorenzo office, which contributes to achieving the pollution prevention goal by using alternative sources of energy, thus limiting CO_2 emissions into the atmosphere.

During 2018, Mercitalia Logistics SpA, in its role as Sub Holding, also initiated the preparation and subsequent issuance of the first Process Guidelines of its Guidance and Coordination Model for the Subsidiaries of the Logistics Hub (formerly Mercitalia Hub).

In particular, the sub-holding company issued the safety, environment and quality process guidelines and the related operating procedures to promote the complete integration of workers' health and safety, integrated management systems, quality, the environment and sustainability in the core fields of its business and that of the Mercitalia hub.

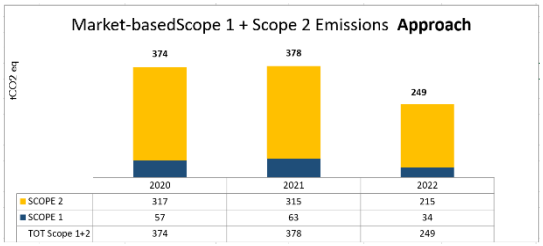
Final energy consumption

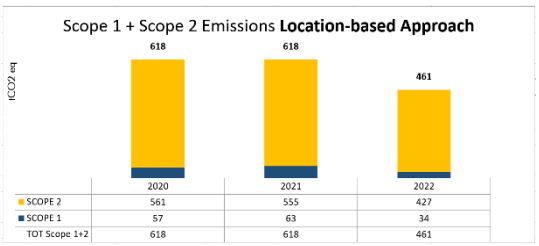
		2022	2021	2020
Electricity	MWh	1,845	2,214	2,088
with guarantee of origin or self-produced solar energy	*%*	*74%*	*70%*	*69%*
Self-produced and consumed solar energy	*MWh*	*214*	*231*	*213*
Natural gas	Sm^3	15,966	30,641	26,679
Diesel	l	565	596	1,073
Petrol	l	229	272	352
Total consumption	**GJ**	**7,216**	**9,051**	**8,482**

Comments on the trend

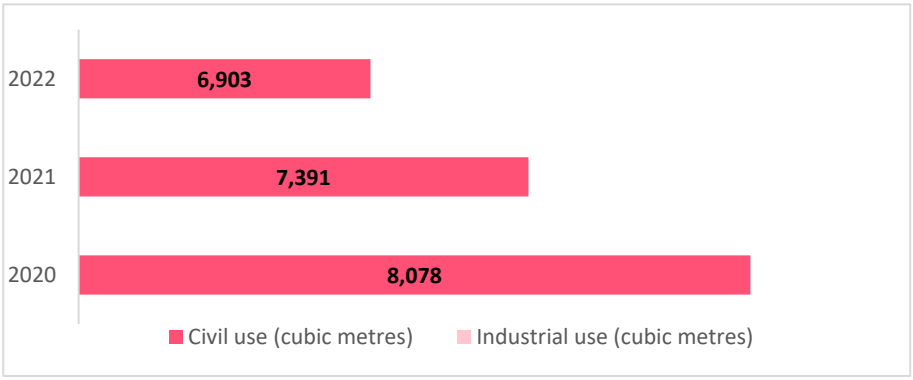
In 2022, total consumption was reduced by about 20%, mainly due to the decrease in electricity and natural gas consumption. The use of electricity was reduced overall by 18%, following a number of changes in utilities, for a correct distribution of consumption with the other parties present at the operating sites; there was also a gradual increase in the share of electricity from renewable sources, certified by Guarantees of Origin (GO), purchased from third parties and a self-produced and directly consumed share generated by photovoltaics. The drastic 48% reduction in natural gas consumption compared to 2021 is also linked to the switching of some utilities. Finally, there has been a gradual reduction in the consumption of petrol and diesel for company cars.

Total CO_2 eq





Water



Comments on the trend

Also for 2022, the water consumption reported in the bills is estimated by the supplier and not recorded; however, as of today, a decrease in consumption of approximately 7% can be seen.

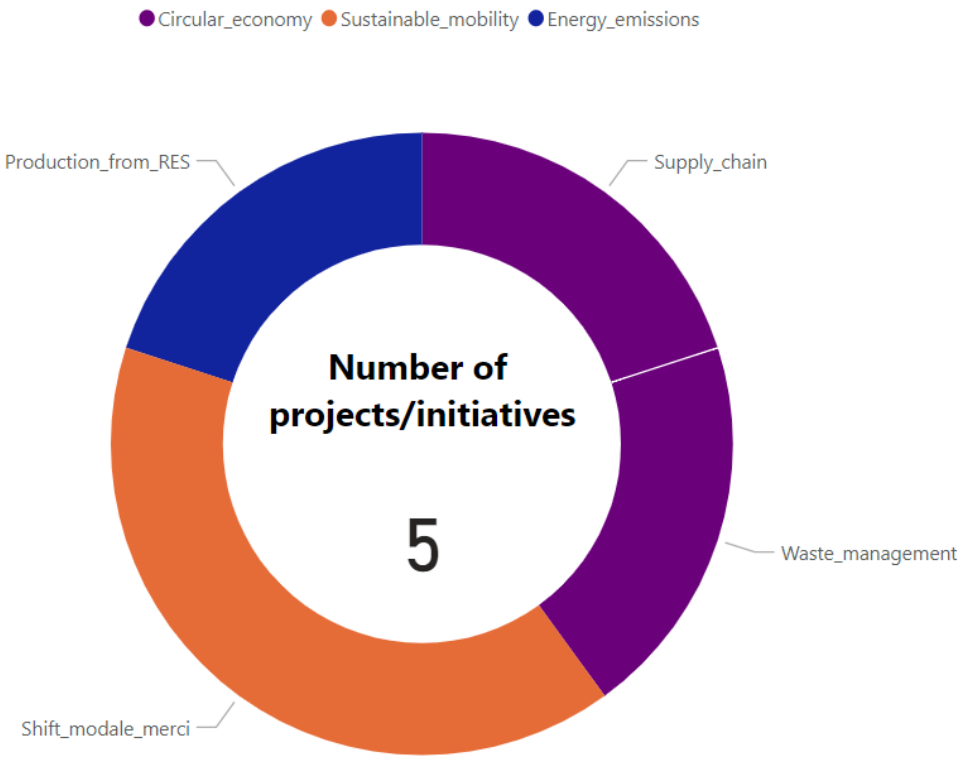
Actual consumption will be settled after the meter reading has been taken by the operator. For the same reason, the data for 2021 had to be updated due to adjustments that occurred during the year and outside the reporting period.

Waste

Comments on the trend

The increase in waste production during 2022 was due to extraordinary maintenance operations, as a result of which approximately 15 tonnes of special non-hazardous waste was produced, consisting mainly of iron and aluminium, which were totally sent for recovery.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Study of the reuse of ballast and other materials, with a view to the circular economy.	In progress	2031	Circular economy	
Development of intermodality through the engagement of institutional Stakeholders. The goal is to refer to the national and international transport system	In progress	2031	Modal shift	
Realisation of photovoltaic plants, of interest to the entire Group. Energy efficiency projects.	In progress	2031	Energy and emissions	
Design and construction of new railway terminals. Revamping existing ones with a view to sustainability.	In progress	2031	Modal shift	
Implementation of the Sustainable Supply Chain Management project, purchasing and investment sustainability	In progress	2026	Circular economy	

Mercitalia Logistics subsidiaries

Mercitalia Rail

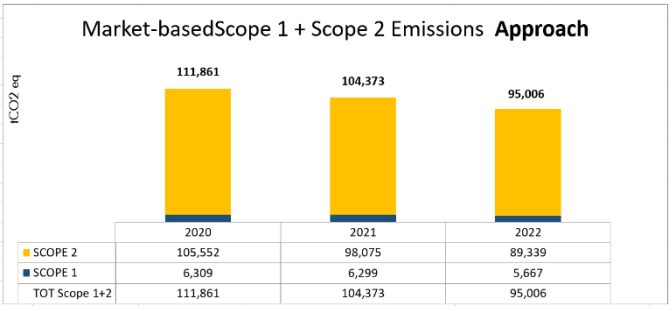
Final energy consumption

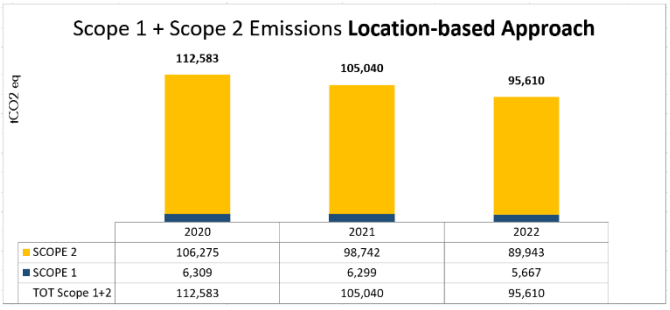
		2022	2021	2020
Electricity for railway traction	MWh	341,222	350,512	352,430
Electricity for other uses	MWh	2,307	2,384	2,413
with guarantee of origin	%	100%	100%	100%
Diesel	l	1,459,968	1,592,562	1,535,376
Natural gas	Sm^3	704,929).	832,774	911,554
Petrol	litres	4,679	1,175	1,448
Total consumption	**GJ**	**1,313,936**	**1,356,734**	**1,364,394**

Comments on the trend

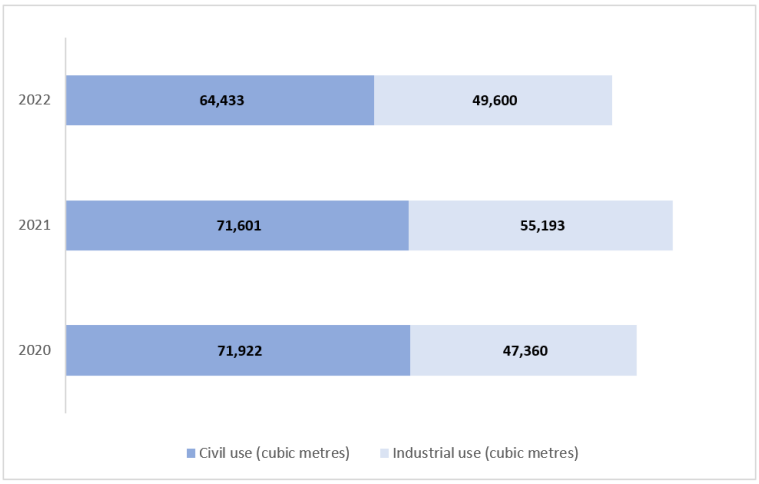
During the three-year period, the overall energy consumption was slightly reduced, in particular electricity and diesel used for railway traction. The consumption of 'electricity for other uses' decreased slightly over the three-year period: notably, the decrease in 2022 was driven partly by a rationalisation of the offices occupied in some locations, such as the Adriatic Territorial Plant, and partly by lower production requirements (both in maintenance and offices). In addition, part of the improvement can be attributed to Livorno utility, which switched from medium to low voltage in July 2021.
Diesel consumption decreased by around 8% year-on-year, as a result of the reduction in production on the railway traction side and the replacement of diesel-powered cars with petrol-powered vehicles, the consumption of which tripled by 2022.
There was also a significant and gradual decrease in natural gas consumption, mainly related to reduced consumption for heating due to some plants not in use (Milan offices) or decommissioned (Verona workshop). With regard to the figure for natural gas consumption, the replacement of the central heating plant in the Milan Maintenance Plant, which was replaced with a diesel-powered boiler for the transitional period in early 2022, plays an important role.

Total CO_2 eq





Water



Comments on the trend

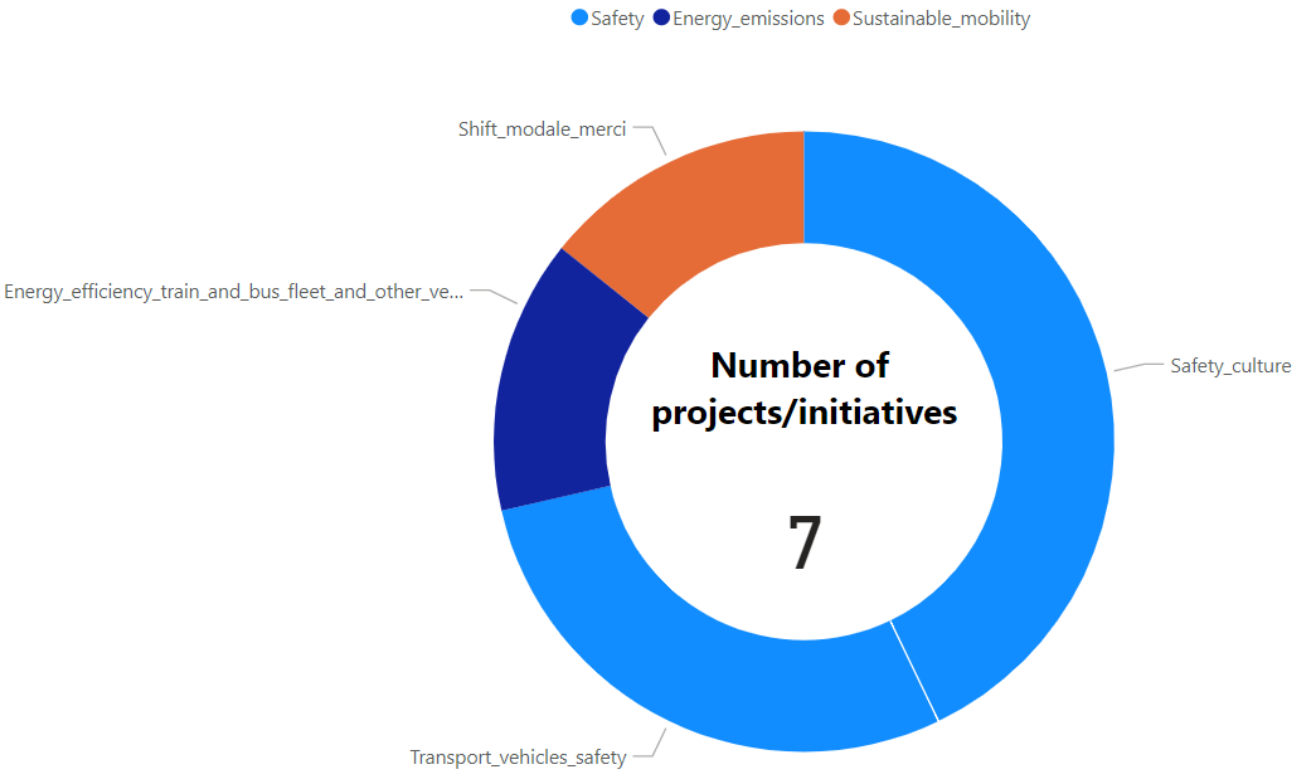
The water withdrawal for civil and industrial use recorded in 2022 was reduced overall by about 10% compared to the previous year. This reduction is attributable, on the one hand, to the awareness-raising activities carried out during the year with regard to personnel, and on the other hand, to the efficiency measures carried out on the water networks.

Waste

Comments on the trend

During 2022, there was a significant reduction in the amount of non-hazardous special waste produced, which was related to the closure of railway vehicle dismantling yards - such as locomotives and wagons - that had produced large quantities of scrap in the previous year. In line with this decrease, the percentage of waste sent for recovery decreased slightly.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Commissioning of a state-of-the-art fleet through the following investments: • Renewal of 90% of the electric engines fleet by 2031 • Renewal of 100% of the Diesel engines fleet (with Diesel/Hybrid engines) by 2031 • Renewal of 25% of the wagon fleet by 2031	In progress	2031	Energy and emissions	Increased vehicle energy efficiency (kWh/train-km-tonne), estimated at: - 3 % for each electric engine - 10% for each diesel/hybrid engine (measured in tonnes of diesel fuel). - 1% for each carriage (measured in lower tare and therefore lower towed weight with load being equal)
Research and innovation activities within the Europe Rail Joint Undertaking in cooperation with RFI and other Logistic Hub companies with regard to flagship area 5 "Sustainable Competitive Digital Green Rail Freight Services" on topics of interest in the area of "Full Digital Train Operation" (Digital Automatic Coupling; train integrity; Yard digitalization for full automated train composition and dispatching) and in the "Seamless Freight" area (standardisation; harmonisation of processes)	In progress		Sustainable mobility	
Development of innovative methods for training operations personnel using augmented reality/virtual reality systems	In progress		Safety	

Mercitalia Logistics subsidiaries

Mercitalia Shunting & Terminal

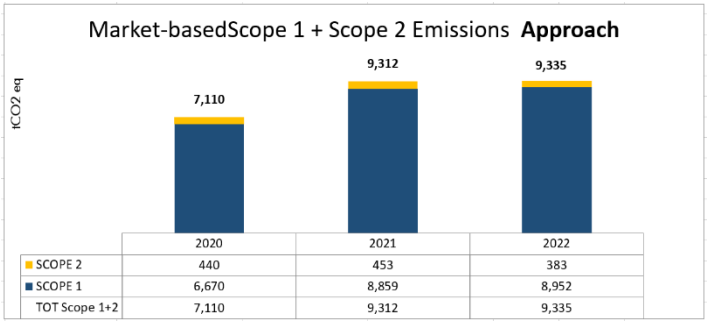
Final energy consumption

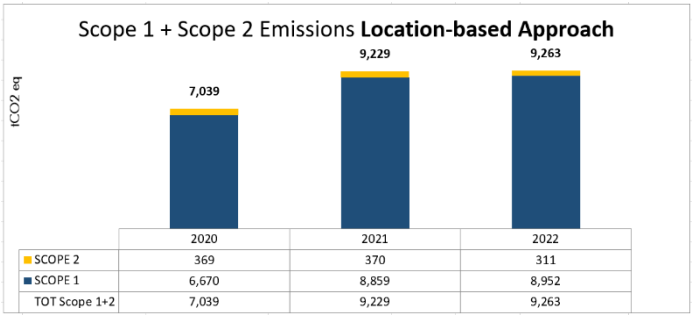
		2022	2021	2020
Electricity for railway traction	MWh	831	885	854
Electricity for other uses	MWh	408	482	419
with guarantee of origin or self-produced solar energy	*%*	*12%*	*9%*	*10%*
self-produced and consumed solar energy	*MWh*	*50*	*45*	*40*
Diesel	l	3,048,906	3,015,689	2,267,230
LPG	l	55,617	52,259	38,118
Total consumption	**GJ**	**116,282**	**115,439**	**87,649**

Comments on the trend

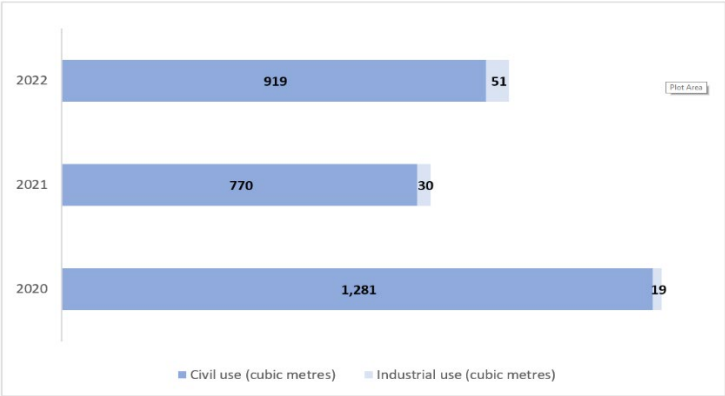
In 2022, electricity consumption was reduced by about 15% as a result of staff awareness-raising activities on the rational use of the resource. Diesel and LPG consumption, on the other hand, increased slightly compared to 2021 values.

Total CO_2 eq





Water



Comments on the trend

Water withdrawal for civil use is mainly for hygienic and sanitary purposes by operating personnel. The increase in consumption in 2022, compared to the previous year, is related to the full resumption of manoeuvring and office activities at the Udine site, following the end of the health emergency.

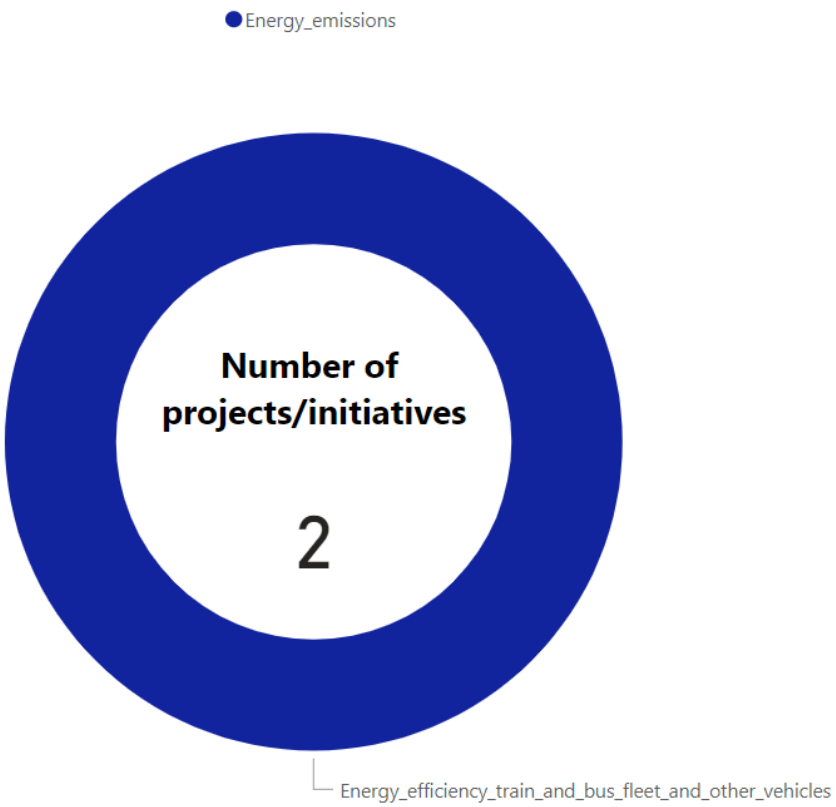
Waste

Comments on the trend

The reduction in waste production during the year is related to the Construction Division, which handles the majority of the waste produced, whose activities contracted sharply in the summer months of 2022.

The variation also depends on the type of processing carried out during the year; for example, in 2022 much more welding waste was produced than in previous years.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Fleet upgrade: - "2.0 shunting engine revamping" project to revamp 26 engines. (carry over) - Acquisition of 6 CZ Loco 744 and 741 shunting engines (carry over) - Acquisition of 2 diesel/electric hybrid shunting engines at the La Spezia site (Carry Over) - Acquisition of 8 Diesel engine or higher technology type CZ Loco or similar - Acquisition of 4 fully-electric traction locomotives to both replace and add to the current fleet.	In progress	2025	Energy and emissions	- 30% total CO_2 emissions of the Company (compared to 2019 baseline)
Use of hybrid engines for shunting in non electrified terminals. Machines equipped with an energy storage system, so that the use of fossil fuels is limited to the point of exclusion	In progress	2031	Energy and emissions	

Mercitalia Logistics subsidiaries

TX Logistik

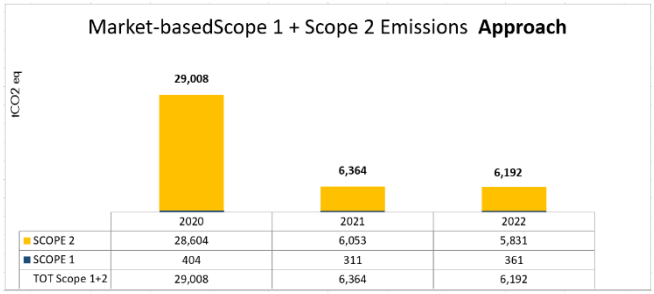
Final energy consumption

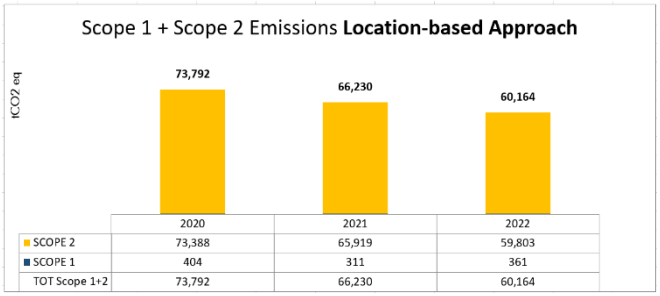
		2022	2021	2020
Electricity for railway traction	MWh	178,987	177,068	160,753
of which from Guarantees of Origin or self-generation from photovoltaics	*%*	*89%*	*89%*	*70%*
Electricity for other uses	MWh	680	737	708
of which from Guarantees of Origin or self-generation from photovoltaics	*%*	*0%*	*0%*	*0%*
Diesel	l	99,234	95,683	128,330
Petrol	l	39,453	22,828	25,354
Total consumption	**GJ**	**651,652**	**644,275**	**586,698**

Comments on the trend

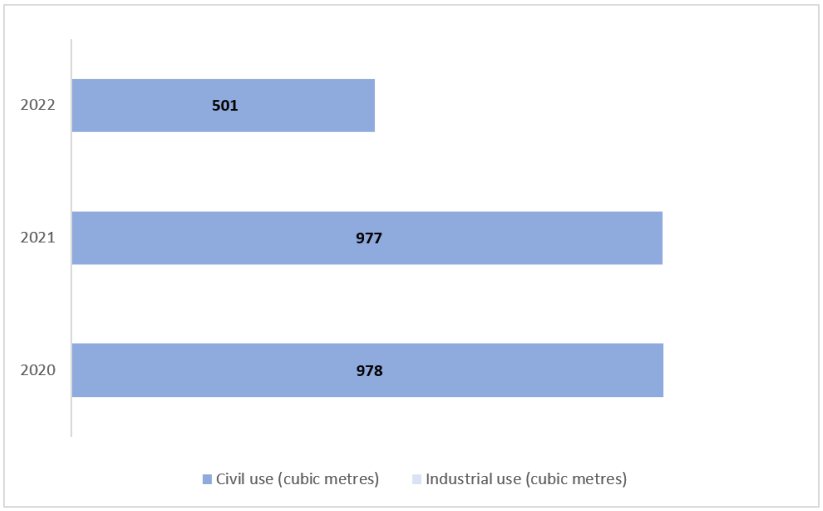
Electricity consumption for rail traction remains approximately constant in 2022, with 89% of electricity certified by Guarantee of Origin. There is a slight reduction (around 7%) in electricity consumption for other uses compared to 2021, as a result of the lower use of company offices with the implementation of smart working. Overall diesel consumption increased by about 4% in 2022 compared to 2021, mainly due to the increase in shunting operations, which started in mid-July 2021 and continued throughout 2022. There was a rise in both the consumption of electricity and the percentage of electricity acquired from renewable sources certified with guarantee of origin in 2021. On the other hand, there was a decrease in diesel consumption also due to less use of the company offices with smart working as a result of the health emergency.

Total CO_2 eq emissions





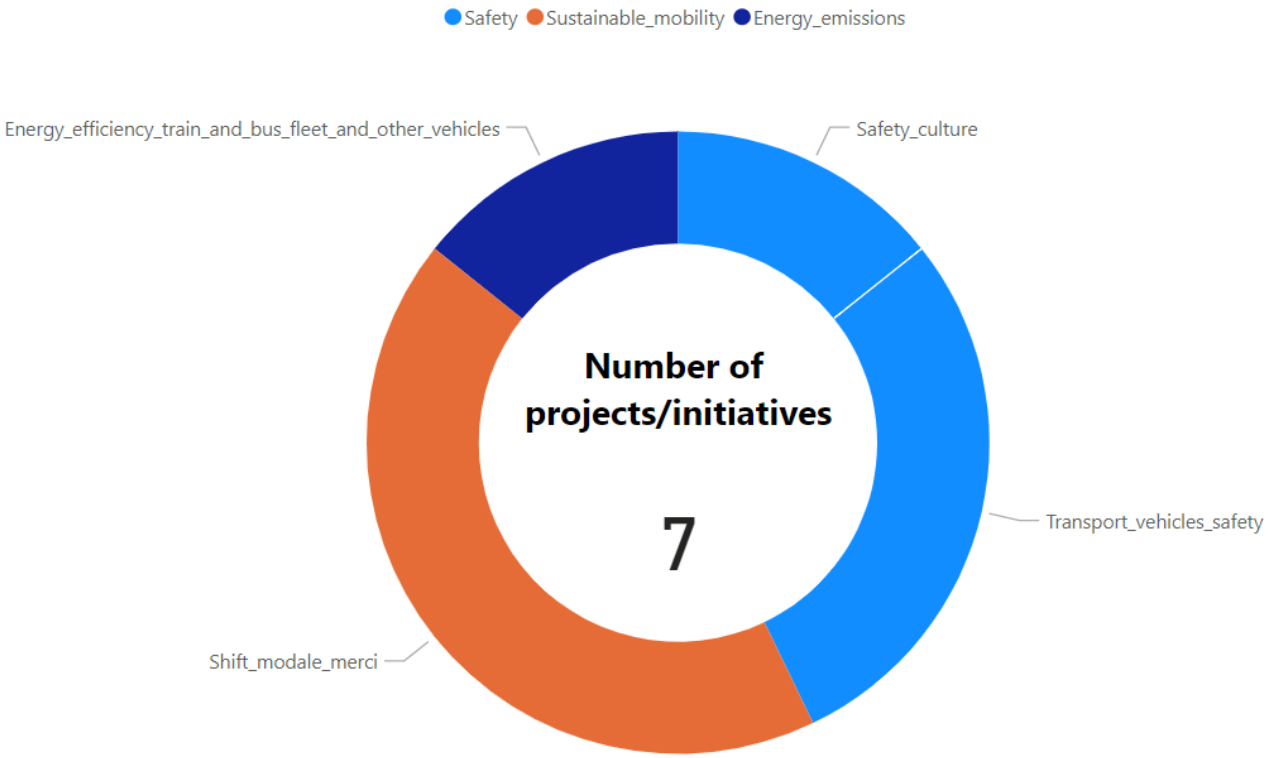
Water



Comments on the trend

The reduction of water consumption in office buildings is due to the introduction of Smart Working legislation.

Projects and initiatives



Below are the main projects/initiatives included in the company's Industrial Plan:

Below are the main projects/initiatives included in the company's Industrial Plan: Title and description of projects/initiatives	Project Status	Project/initiative end date and start-up date (month/year)	Scope	Average annual savings when fully operational/target (ref. Sustainability KPIs)
Introduction of a new generation of Nikrasa, a vertical loading system for combined rail transport, which allows greater modal transfer of trailers that cannot currently be loaded by crane, from road to rail.	In progress		Sustainable mobility	Increasing the number of transports with Nikrasa, each transport is a modal transfer from road to rail as this transport would have been 100% by road without Nikrasa
Implementation of the Track & Trace system for a more efficient utilisation of the fleet (both carriages and engines) and to provide more/better information to customers and increase the attractiveness of rail transport.	In progress		Sustainable mobility	

FS Sistemi Urbani

OUR APPROACH

FS Sistemi Urbani is responsible for developing the Group's assets which are not functional for railway operations and providing integrated urban services with a business-oriented approach, as well as streamlining and improving the functioning and service offered to the public.

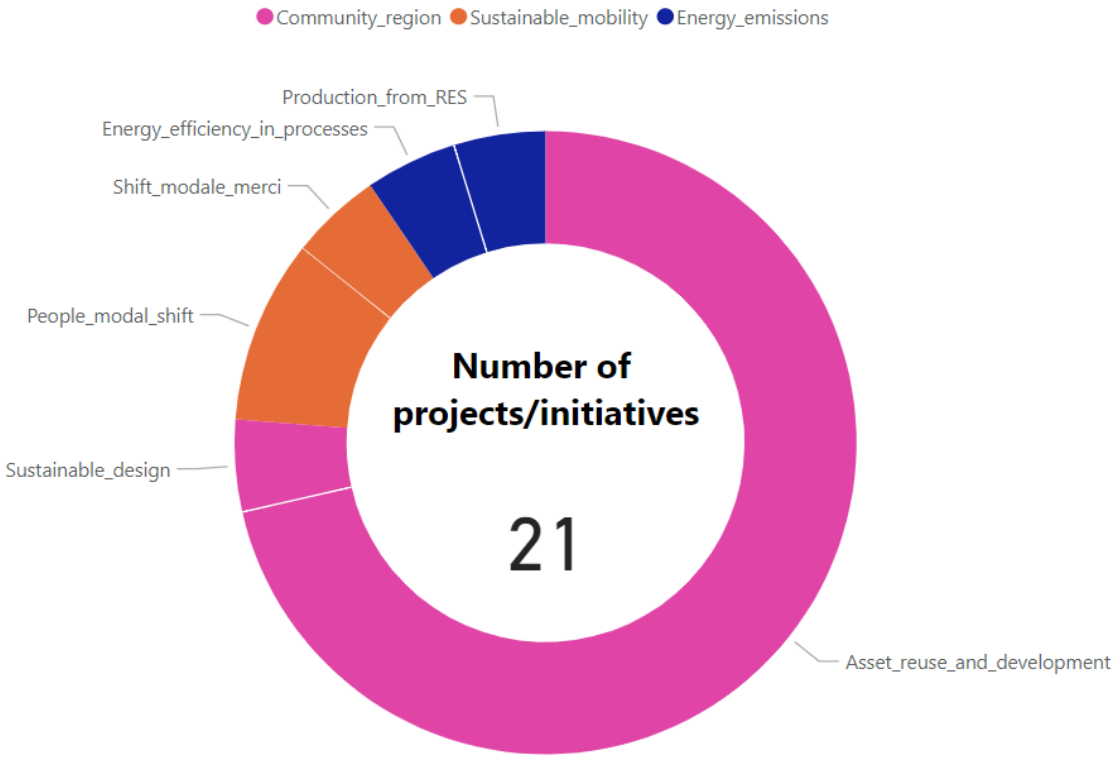
As the Sector Holding Company of the Urban Pole, FS Sistemi Urbani pursues the mission of guaranteeing the activities in the real estate field and the supervision of the urban regeneration sector and the intermodal and logistics solutions in urban areas for the first and last phase of the supply chain.

Strategic priorities include the regeneration of real estate, integrated parking management and the launch of new partnerships.

In the course of 2022, the company embarked on a path to introduce sustainability within the Supply Chain Management process. FS Sistemi Urbani, in line with what is indicated by the parent company, intends to contribute to positively influencing the choices and behaviour of supplier companies, in order to achieve an improvement in the sustainability profile of the market offer.

Projects and initiatives

Below are the main projects/initiatives included in the company's Industrial Plan:



Below are the main projects/initiatives included in the company's Industrial Plan:

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
Integrated design, with the Fitorimedio pilot project, which combines reclamation and enhancement through the integrated planting of trees to serve the soil purification and trees that will remain as a legacy of the park. The project covers an area of approximately 2,000 m² located at Scalo Farini in Milan	In progress	2025	Community and territory
Enhancement of the areas owned by the Scalo di Milano Lambrate for environmental and urban regeneration through the international competition Reinventing Cities	In progress	2023	Community and territory
Project for constructing a recreational path along the retired Genoa-Ventimiglia railway line, between Imperia and Andora, approximately 20 km long, and redevelopment of idle areas like former freight terminals and/or retired passenger buildings.	In progress	2023	Community and territory
Development of the Venezia Mestre – Parco del Piraghetto areas for urban regeneration and environmental development.	In progress	2025	Community and territory
Development of FS Group areas at the Verona Porta Nuova hub, turning the freight hub areas into a city park enhanced with new functions for a total surface area of 450,000 m².	In progress	2025	Community and territory
Development of FS Group areas (FSSU-Trenitalia-RFI) at Bologna Ravone-Prati di Caprara for environmental and urban regeneration via the international Reinventing Cities competition	In progress	2025	Community and territory
Urban regeneration project of FS Group areas (FSSU-FS-RFI) within the Arezzo station which involves the transformation of the railway areas by setting up a new intermodal hub and the planting of greenery and implementation of services to support the community	In progress	2026	Community and territory
Urban regeneration project of railway areas to be retired in the future at the Salerno railway station	Planned	2026	Community and territory

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
Value enhancement of FS Group areas for redevelopment and environmental, tourist and archaeological development of the Appia Antica Park, by signing a memorandum of understanding with the Park Authority, Archaeological Park, Roma Capitale and RFI.	Under evaluation	TBD	Community and territory
Development of FS Italiane Group areas at Roma Tuscolana for environmental and urban regeneration via the international Reinventing Cities competition and an urban planning amendment to the General Zoning Plan (GZP)	Under evaluation	TBD	Community and territory
Urban regeneration project of the disused railway areas of Roma Tiburtina	In progress	TBD	Community and territory
Reactivation of the Lecce-Surbo freight terminal to redevelop the area in order to enhance first- and last-mile logistics and intermodality offerings	Planned	TBD	Sustainable mobility
Inclusion of approximately 2.3 million m² of green areas in development projects of areas that are not used for railway operations	In progress	2032	Community and territory
Planned planting of approximately 12,000 trees in areas that are not used for railway operations	Planned	2032	Community and territory
Development and urban regeneration of the railway areas no longer in use in Turin with the municipal authority and the Piedmont regional authority	In progress	2027	Community and territory
Plan to redevelop and reorganise Napoli Porta Est Intermodal Hub	In progress	2029	Community and territory
Enhancement of the Gruppo FS real estate not used for railway operations through the provision of areas for the development of large-scale photovoltaic energy production plants, in order to promote the transition to energy consumption based significantly on renewable sources by 2030	Under evaluation	2032	Energy and emissions
Development of areas not used for railway operations for the purpose of developing initiatives for first and last mile logistics	Planned	2032	Energy and emissions
Increasing parking facilities in abandoned areas near stations or interchanges in order to incentivise the road-rail modal shift	In progress	2032	Sustainable mobility

Title and projects/initiatives description	Project Status	Project/initiative end date and start-up date (month/year)	Scope
Contribution to the MOST Project of the National Sustainable Mobility Centre	Planned	2025	Community and territory
Concession of free areas for the promotion of social events and initiatives	Under evaluation	TBD	Community and territory

Certified Management Systems

The following table shows the certification scopes for the various Group companies. The "Integrated systems" column shows information on the integration of the Management Systems (Quality, Environment, Occupational safety).

Ferrovie dello Stato Italiane	Integrated Systems: -
Environment (E)	**Ferrovie dello Stato Italiane (Headquarters)** Scope: setting the guidelines and coordinating policies and industrial strategies for the Group's operating companies, implementing corporate governance processes, preparing the Group's business plan, governing and monitoring corporate relationships within the Group, managing relationships with the government and other institutional authorities.
Occupational safety (S)	**Ferrovie dello Stato Italiane (Headquarters and operational sites: Naples, Florence, Brussels)** Scope: setting the guidelines and coordinating policies and industrial strategies for the Group's operating companies, implementing corporate governance processes, preparing the Group's business plan, governing and monitoring corporate relationships within the Group, managing relationships with the government and other institutional authorities.

RFI	Integrated Systems: Q + A + S
Quality (Q)	**Rete Ferroviaria Italiana (Headquarters and operational office)** Scope: design, construction, commissioning, management and maintenance of the national railway infrastructure and the processes and activities involved in the safe operation of trains and railway operations. Development management of the rail traffic hazard database; checks on the design of the works for validation/approval purposes conducted in accordance with applicable laws. **Operational sites** Scope: design, construction, commissioning, management and maintenance of the national railway infrastructure and the processes and activities involved in the safe operation of trains and railway operations. Development and management of the rail traffic hazard database. **Officina Nazionale Armamento Fonderia Bari - ONAF Bari** Scope: development and production of manganese steel castings of one-piece railway crossing hearts complete with couplings and machining, welded joints and rail and track assemblies for the railway industry.

Environment (E)	**Rete Ferroviaria Italiana (Headquarters and operational office)** Scope: design, construction, commissioning, operation and maintenance of the national railway infrastructure and related processes and activities. **Operational Sites:** Scope: design, construction, implementation, management and maintenance of national railway infrastructure. **Officina Nazionale Armamento Fonderia Bari - ONAF Bari** Scope: development and production of manganese steel castings of one-piece railway interlocking hearts complete with couplings and machining, welded joints and rail and track assemblies for the railway industry through the stages of: raw material management, core preparation and moulding, preparation of casting and casting charge, plate-shifting and shot blasting, heat treatment, surface finishing, machining and welding, testing, storage and delivery of finished products.
Occupational Safety (S)	**Rete Ferroviaria Italiana (Headquarters and Operational office)** Scope: design, construction, commissioning, operation and maintenance of national railway infrastructure and related processes and activities. **Operational Sites:** Scope: design, construction, commissioning, operation and maintenance of national railway infrastructure and related processes and activities. **Officina Nazionale Armamento Fonderia Bari - ONAF Bari** Scope: development and production of manganese steel castings of one-piece railway interlocking hearts complete with couplings and machining, welded joints and rail and track assemblies for the railway industry through the stages of: raw material management, core preparation and moulding, preparation of casting and casting charge, plate-shifting and shot blasting, heat treatment, surface finishing, machining and welding, testing, storage and delivery of finished products.
Bluferries	**Integrated Systems: Q + A+ S**
Quality (Q)	**Bluferries (Registered office, operating sites and owned ships)** Scope: sea transport of vehicles, goods and persons operated by vessels; ticket sales.
Environment (E)	
Occupational Safety (S)	
Terminali Italia	**Integrated Systems: Q + A+ S**
Quality (Q)	**Terminali Italia (Headquarters and operating sites)** Scope:

Environment (E)	management and operation of terminals equipped for intermodal transport; provision of terminal services through shunting, container handling and accessory services; technical and administrative activities.
Occupational Safety (S)	

Trenitalia	**Integrated Systems: Q + A + S**
Quality (Q)	**Trenitalia (Headquarters and operating sites)** Scope: design and provide integrated mobility passenger transport by rail.
Environment (E)	
Occupational Safety (S)	

Trenitalia C2C	**Integrated Systems: -**
Quality (Q)	**Trenitalia C2C** Scope: operation and maintenance of infrastructure and the fleet controlled by C2C on the Tilbury and Southend routes arriving from and departing for London Fenchurch Street.
Environment (E)	
Occupational Safety (S)	

Busitalia-Sita Nord	**Integrated Systems: Q + A + S**
Quality (Q)	**Busitalia - Sita Nord (Headquarters and regional divisions)** Scope: design and provision of transport services using buses and trolley buses: local public transport. Provision of bus transport services: long-haul lines and substitutes and supplements for rail services and atypical services. Provision of alternative mobility services (minimetrò, lifts, escalators and moving walkways, funicular, escalators). Maintenance and depot facilities for its own vehicle fleet and alternative mobility. Management of parking areas and rest areas.
Environment (E)	
Occupational Safety (S)	

Busitalia Veneto	Integrated Systems: Q + A + S
Quality (Q) **Environment (E)** **Occupational Safety (S)**	**Busitalia Veneto (Headquarters and operating sites)** Scope: design and provision of transport services using buses and trolley buses: local public transport. Design and provision of transport services using buses: long haul lines, rentals and atypical services. Maintenance and depot facilities for its own vehicle fleet.

Busitalia Campania	Integrated Systems: -
Quality (Q)	**Busitalia Campania (Headquarters and operating sites)** Scope: design and provision of transport services using buses (local public transport, long haul lines, rentals and atypical services); maintenance and depot facilities for its own vehicle fleet.

Mercitalia Logistics	Integrated Systems: Q + A + S
Quality (Q) **Environment (E)** **Occupational Safety (S)**	**Mercitalia Logistics (Headquarters and local units)** Scope: direction and coordination of the operating companies of the Mercitalia hub; planning, organisation and provision of logistics services for various goods by coordinating third parties; management of real estate assets - planning and organisation of 'fast' rail transport and logistics services for various goods through coordination of third parties design process of the services provided by the company, including the FAST freight service management and coordination of subsidiaries.

Mercitalia Shunting & Terminal	Integrated Systems: Q + A + S
Quality (Q) **Environment (E)**	**Mercitalia Shunting&Terminal (GE Headquarters and operational sites)** Scope: design, construction, maintenance and restructuring of sidings; freight and passenger transport services as railway company in the national railway infrastructure; management of shunting of passenger rolling stock, freight, dangerous goods and waste in railway sidings, depots, and within the national railway infrastructure; intermodal terminal management and ancillary services; transport and logistics, waste brokerage; terminal management and ancillary services. ordinary and extraordinary maintenance of railway vehicles and diesel traction vehicles. design, construction and maintenance of railway sidings and ancillary installations.

Mercitalia Rail	Integrated Systems: Q + A + S
Quality (Q) **Environment (E)** **Occupational Safety (S)**	**Mercitalia Rail (Headquarters and operating sites)** Scope: planning and delivery of rail freight services: planning and implementation of the transport service, train and crew preparation, shunting operations, verification and delivery of accompanying documentation; carriages and locomotive maintenance.

FS Sistemi Urbani	Integrated Systems: -
Environment (E)	**FS Sistemi Urbani (Headquarters)** Scope: Asset analysis, asset management and planning, valorisation, marketing and sale services for all real estate assets not used for railway operations of the FS Italiane Group; real estate and urban intermodal systems management services for its real estate assets.

Grandi Stazioni Rail	Integrated Systems: -
Environment (E)	**Grandi Stazioni Rail (station complexes of Roma Termini, Roma Tiburtina, Milano Centrale, Venezia S. Lucia, Torino Porta Nuova, Napoli Centrale, Venezia Mestre, Verona Porta Nuova, Bologna Centrale, Genova P. Principe and Genova Brignole, Palermo Centrale, Bari Centrale and Firenze S.M. Novella)** Scope: management of station complexes and development support through facility and energy management services.

Ferservizi	Integrated Systems: Q + A + S
Quality (Q)	**Ferservizi (Headquarters and operating units)** Scope: service management: administration, procurement, real estate sales services, leases and agreements, technical asset services, maintenance and facility management services for office buildings and hotels, the issue of travel concessions, company canteen services, real estate and legal custody services, printing services, credit management, tax services, correspondence, notifications and document filing. Documentary archive management.
Environment (E) **Occupational Safety (S)**	**Ferservizi (Headquarters and operating units)** Scope: provision of all the activities that the company performs to manage administrative, sale and lease of real estate, custody and safeguarding of real estate and facility services, in addition to group procurement, IT, maintenance and document filing. Management of document archives.

Italferr	Integrated Systems: Q + A + S
Quality (Q) **Environment (E)** **Occupational Safety (S)**	**Italferr (Headquarters and operating sites)** Scope: project management, design, contracting management, works management and supervision and safety coordination for transport infrastructure work and the related interferences.

Gruppo Netinera	Integrated Systems: -
Quality (Q)	**Netinera Deutschland** Scope: development of Group's business; management of new or existing public transport contracts in Germany and abroad; support to the affiliated companies with technical and non-technical services. **Netinera Werke** Scope: maintenance and inspection of railway vehicles in accordance with current German regulations (Railway, Building and Operating Regulations – EBO). **OHE** Scope: operating maintenance on electric engines and passenger carriages; maintenance and inspection of railway vehicles in accordance with current German regulations (Railway, Building and Operating Regulations – EBO).
Environment (E)	**Vlexx** Scope: public transport with electric and diesel buses; operating and heavy maintenance on vehicles at proprietary workshops. **Erixx** Scope: public transport with diesel buses; operating maintenance on vehicles at proprietary workshops. **Länderbahn** Scope: public transport with diesel buses and electric and diesel engines; operating maintenance on vehicles at proprietary workshops.

Anas	Integrated Systems: -
Quality (Q)	**Anas (Head Offices and operational offices)** Scope: planning, execution, monitoring and technical, administrative, legal and financial management of the planning processes for large-scale infrastructural works, roadway works contracting and the related services, works management, direct operation and surveillance of the road network, research and the testing of materials and infrastructures using innovative technologies. Customer contact management.

Hellenic train	Integrated Systems: -
Quality (Q)	**Hellenic Train** Scope: definition of objectives and measurement of delivered service quality Technical support of railway rolling stock systems

Ferrovie del Sud-Est e Servizi Automobilistici	Integrated Systems: Q + S
Quality (Q	**Ferrovie del Sud-Est e Servizi Automobilistici (Headquarters and operational offices)** Scope: design and provision of local public transport services by road. design and provision of local public transport services by rail. maintenance of railway rolling stock. design and operation (routine and extraordinary maintenance) of railway infrastructure.
Occupational Safety (S)	