Environmental Statement

020 022

Duferco
TRAVI E PROFILATI

www.dufercotp.com


Duferco
TRAVI E PROFILATI

contents

1. Foreword 5

2. The Company and its business 6
2.1 Duferco Travi e Profilati Group 6
2.2 Travi e Profilati di Pallanzeno S.p.A 8
2.3 General Company details 10
2.4 Descrption of the production process from scrap to steel 12
2.4.1 Procurement, control and storage of scrap 15
2.4.2 Furnace loading and melting in the electric steel furnace (EAF) 16
2.4.3 Slagging and tapping 19
2.4.4 Secondary metallurgy 20
2.4.5 Continuous casting 21
2.4.6 Storage and shipping 22

3. Regional framework 24
3.1 Soil and subsoil 25
3.2 Acoustic zoning in the region 27
3.3 Seismic activity in the area 29
3.4 Weather and climate conditions 30

4. Environmental management 31
4.1 Environmental policy 31
4.2 Environmental management system 32
4.3 ITALIAN LEGISLATIVE DECREE 231/2001 – The company's organisational and management model (MOG 231/2001), supervisory body and code of ethics 33
4.4 Internal and external communication 34

5. Environmental analysis 38
5.1 Assessment of the context 38
5.2 Stakeholder assessment 39
5.3 Assessment of direct and indirect environmental aspects 41

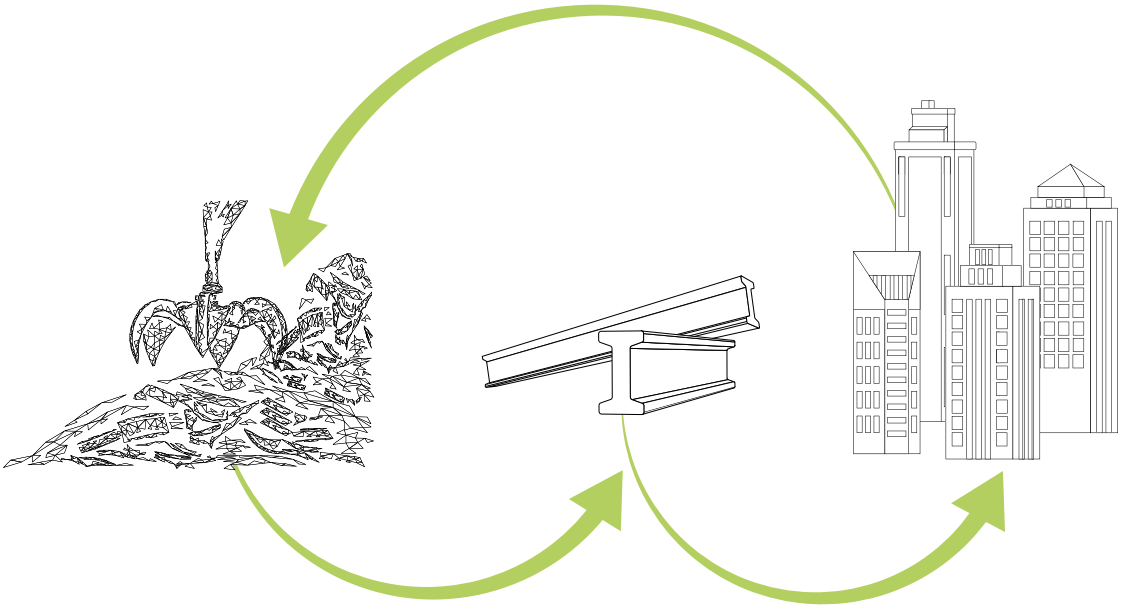
6. Indications of environmental performance 45
6.1 Production 45
6.2 Raw material 46
6.3 Energy sources 49
6.4 Water supply 52
6.5 Waste water 54
6.6 Emissions released into the atmosphere 57
6.6.1 Emission Trading System (ETS) 60
6.7 Diffuse emissions 61
6.8 Waste 63
6.9 Biodiversity 66

7. Circular economy 67
7.1 Blackstone - a new life for black slag 67
7.2 Recovery and reuse of residues and by-products 69

8. Emergency management 69
8.1 Fire and explosions 70
8.2 Soil contamination 70
8.3 Radioactivity 72
8.4 Major accident risks 73
8.5 Emissions into the atmosphere 74

9. Improvement plan 2019/2022 78

10. Applicable legislation 83
11. Validation of the Environmental Statement 89



1. Foreword

For the company Travi e Profilati di Pallanzeno S.p.A. (hereinafter also referred to as TPP), a company of the Duferco Travi e Profilati S.p.A. group, the Emas Environmental Statement is the result of its constant commitment to developing its business in full compliance with the principles of environmental sustainability.

These principles are carried forward by the company with ethics and transparency, protecting its work environment and the surrounding environment, showing respect for people and their safety and building relationships based on trust with our stakeholders.

All the economic investments implemented to constantly improve the technologies of the San Zeno Naviglio steel plant in Brescia are aimed at minimising the environmental impact; in our sector, research and technological innovation is necessary to maintain the quality of products while protecting the environment and people.

The aim of this Environmental Statement is to communicate with transparency and objectivity that our essence is steel. It is the best product for recycling and using an infinite number of times; our commitment is to produce it in an efficient and eco-sustainable way.

2. The company and its business

2.1 Duferco Travi e Profilati Group

The origin of the company dates back to 1996, when the Duferco Group took over all the assets of the then Ferdofin Siderurgica, creating the renamed Duferdofin.
Duferdofin - Nucor, an equal joint venture, was founded in 2008 from an alliance with Nucor, a global player in the steel and iron sector. It then returned to being a fully Italian company in 2020 and became **Duferco Travi e Profilati SpA.**

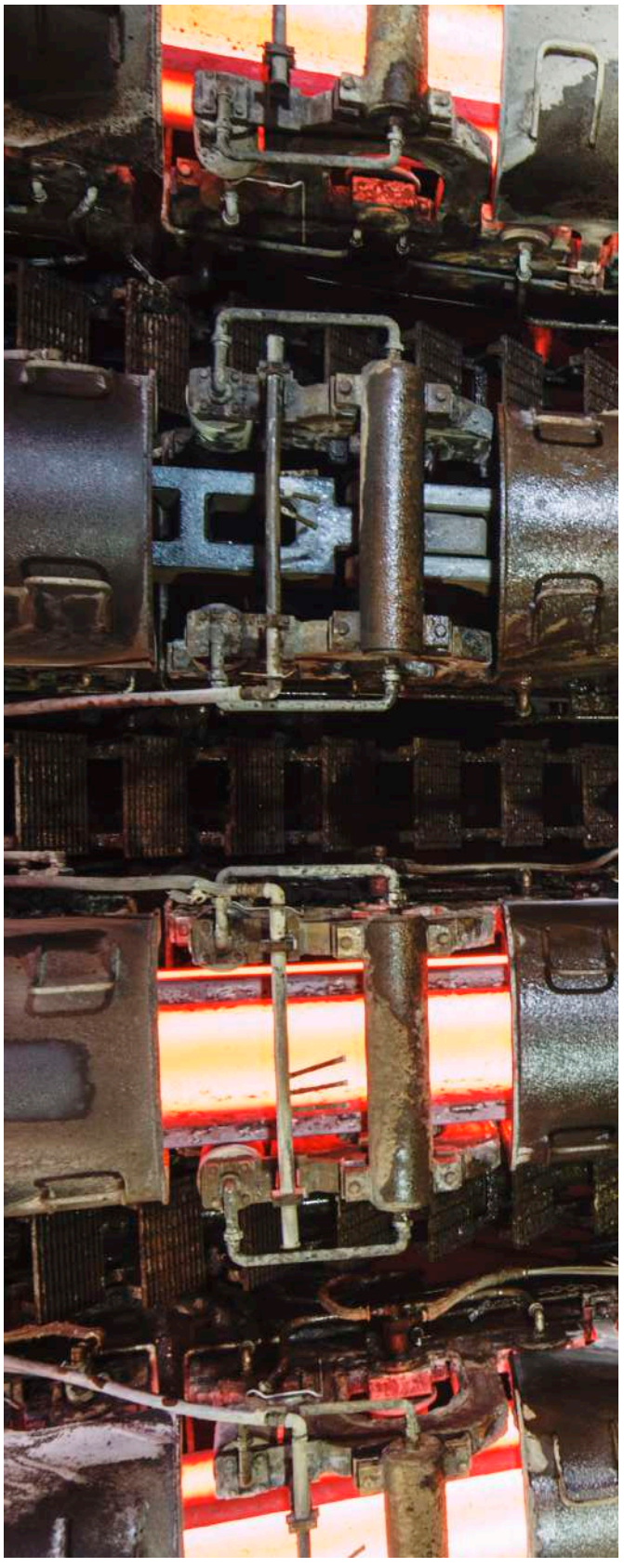
Our commitment and continuous growth in developing technologies and innovations have helped identify our brand as a reference point in Italy for the production of long beams and products, with a production capacity of 979,500 tons.

The Group's strategy is to strengthen Duferco Travi e Profilati's competitive position on the market, through product diversification into higher value-added segments and by developing vertically integrated operations to compete effectively in Central and Southern Europe and Mediterranean markets.

Our efficient combination of skills, technologies and human resources has created a solid and well-integrated system of companies, capable of achieving maximum synergy in the production of quality steels for forging and rolling, at competitive costs and with a minimum environmental impact.

The Group, based in San Zeno Naviglio in the province of Brescia, has four production units that cover the entire production from liquid steel to the finished product: San Zeno Naviglio, Giammoro in the province of Messina, Pallanzeno in the province of Verbania and San Giovanni Valdarno in the province of Arezzo.

All the factories are connected with highway and railway lines, and thanks to



access to the sea and Acofer warehouses, an integral part of the Duferco Travi e Profilati group located in strategic areas, the group guarantees timely and quality services on the national and international market.

Brescia, the headquarters of Duferco Travi e Profilati, represents the heart of the steel business, whose production has grown steadily in recent years.

This important result has been achieved thanks to a constant commitment combined with technological investments, the last of which is a new ladle furnace capable of significantly reducing energy consumption, as well as the focus on safety, environmental sustainability, and the people working in this group.

The group ended 2018 with the best historical volume in sales of profiles and soles for earthmoving machines, and is increasingly focused on expanding its

range of special profiles and quality steels for the automotive, oil and gas markets.

2.2 Travi e Profilati di Pallanzeno S.p.A.

The company Travi e Profilati di Pallanzeno SpA (hereinafter also referred to as TPP), acquired by Duferdofin in 1996 and made part of the Duferco Travi e Profilati group in 2008, has two production sites, one in San Zeno Naviglio (BS) and one in Pallanzeno (VB).

The **San Zeno Naviglio plant** consists of an electric furnace steel mill that has two continuous castings; semi-finished products are produced in a square, rectangular, round and dog bone section, in compliance with national and international standards with a high-level plant structure, which is confirmed with quality, environmental and safety certifications.

By the end of 2022, the San Zeno Naviglio plant will be equipped with a **new beam rolling mill** that will allow the optimal verticalisation of steel produced in the steel mill; it will have a very low environmental impact, high energy savings and will use renewable energy thanks to the stipulation of the PPA (long-term Power Purchase Agreement).

This investment shows that our goal is to make the group increasingly excellent and profitable, while respecting the environment, thanks to the best technologies and innovations.

The Pallanzeno plant performs lamination of the small and medium range of laminates, such as beams, angles, wide plates and special profiles; for the latter, the intention is to specialise more.

Our serious industrial policy aimed at product diversification is making the plant one of the few in the world that produces a wide range of items on the same rolling mill.

Careful maintenance and the continuous search for improvements leads us to be more competitive in product quality,

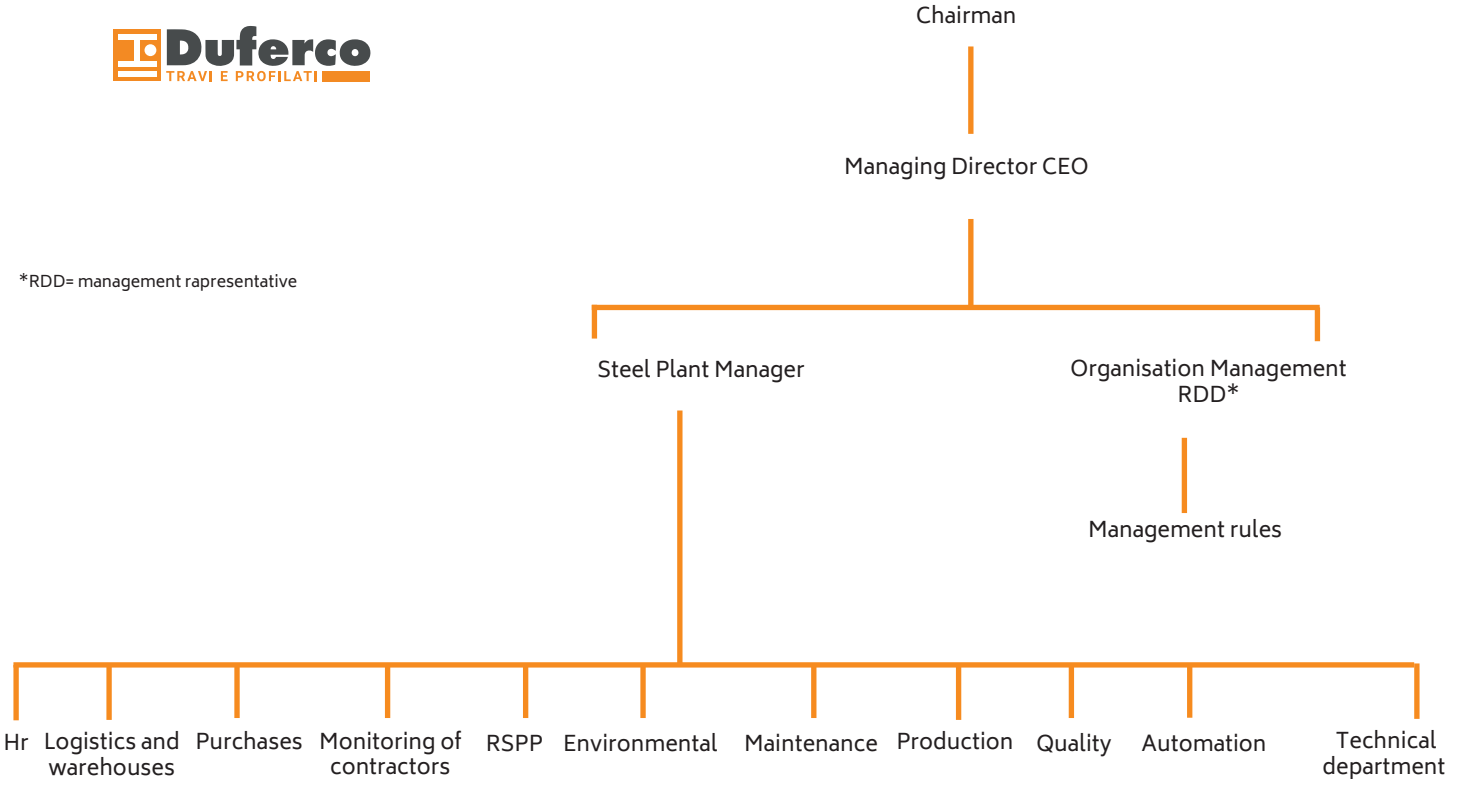
guaranteeing success and sustainability; in fact, both plants are equipped with a structured and certified environmental management system according to the requirements of the ISO 14001 standard.

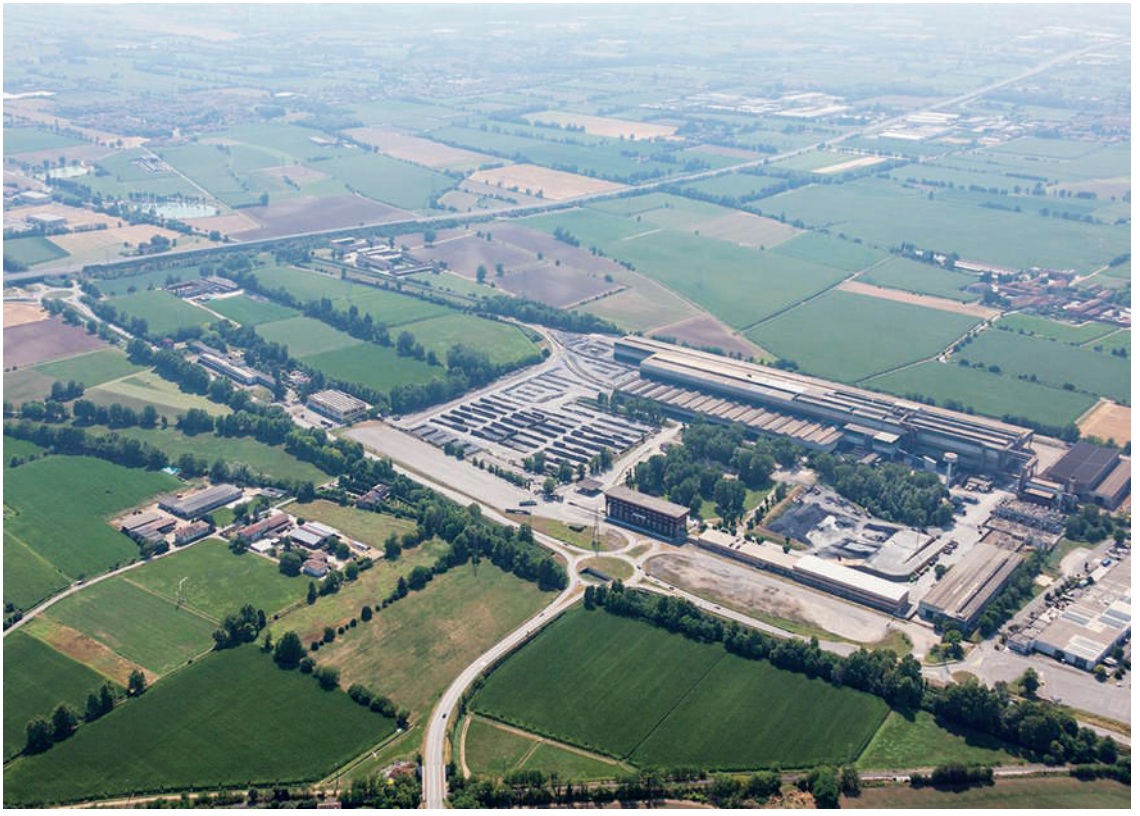
EMAS registration, and therefore this environmental statement, is only for the Travi e Profilati di Pallanzeno steelworks located in San Zeno Naviglio (BS).

2.3 General Company details

The TPP plant is located in San Zeno Naviglio in the province of Brescia, in an industrial area, flanked and reachable from the A21 motorway near the Brescia Sud exit, and from the A35 via the Ospitaletto - Montichiari connection.

The railway connection serving the steel mill is located 150 m south of the Brescia-Cremona and Brescia-Parma fork and extends for 5,286 m inside the plant, and for another 2,515 m on the connection of the FS line plant, for a total of 7,801 m.





Company name	Travi e Profilati di Pallanzeno S.p.A.
Employer	Rosario Tornello
Registered Head Office	Via Sempione 7 - 28884 Pallanzeno
Production site	Via Armando Diaz, 248 - S. Zeno Naviglio
NACE code	24.10 - Attività siderurgiche
Environment and Safety Delegate	Rosario Tornello
Safety and the Environment	Giuseppe Guerrini - g.guerrini@dufercotp.com
Environmental Manager	Ciro Vittozzi - c.vittozzi@dufercotp.com
Management Representative	Massimo Rolandi
Number of working shifts	3 shifts (the night shift does not involve any change in aspects related to production)
Total site area	479.955 sqm
Covered area	83.136 sqm

Table 1

2.4 Description of the production process from scrap to steel

Travi e Profilati di Pallanzeno, in San Zeno Naviglio, bases its production process on the recovery and processing of ferrous scrap through the use of an electric arc furnace.

The plant does not use raw materials from ore, but reprocesses and reuses ferrous scrap from collection and recycling plants with a lower environmental impact due to the supply of the raw materials.

The plant has an authorised potential production capacity of 979,500 tonnes/year.

The production process, which is accompanied by administrative and commercial activities, can be summarised in the following phases:

Procurement and ferrous scrap

Movement and storage in the yard

Packaging of baskets for loading into the furnace

Scrap melting in the EAF furnace, 100 tonnes

Fusione rottame in forno EAF, 100 tonnellate

Liquid steel tapping in a ladle and transfer to stations for secondary metallurgical treatments; Ladle furnaces, LF and LF-Twin, and vacuum degassing plant, VD

Continuous casting plants CCM

- CC1 4 lines, 17m radius, producing round/square and pre-shaped section blooms

- CC2 6 lines, 10 m radius, producing square section billets and blooms

Product cooling

Product analysis, quality control and product testing

Shipping to the customer


R
R

2.4.1 Procurement, control and storage of scrap

The procurement of ferrous scrap takes place both through domestic and foreign suppliers, and the scrap is delivered both by road and by rail.
In order to guarantee high quality and environmental standards, TPP has implemented a strict internal protocol, with control practices even much stricter than those required by industry regulations. These practices allow strict control aimed at assessing and accrediting suppliers, including the widespread network of sub-suppliers, monitoring their reliability over time.

Receipt

Upon entering the plant, all the material, whether arriving by road or rail, is subjected, before acceptance, to specific radiometric checks through the use of Fixed Portals, installed at the respective weights. The high reliability of the instruments used, as well as the sensitivity of the measurements, make it possible to detect the possible presence of radioactive sources, whether of natural or artificial origin.

Subsequently, the load is subjected to all the checks required by a suitable acceptance procedure, drawn up and managed in accordance with the provisions of the sector regulations; the checks are aimed at verifying the appropriate requirements in terms of safety, cleanliness and quality, as well as administrative regularity. Only once all the above has been confirmed, the load is accepted and subsequently sent to the storage area.

Here the scrap, during the unloading from the trucks on the ground into suitable inspection areas, and subsequent handling with self-propelled vehicles, is subjected to a second evaluation process designed to verify more accurately and carefully the correspondence to what is expected in terms of quality and size, as well as to complete the control operations (second level controls) in terms of

safety and cleaning.

Once the quality and size have been identified, the scrap is then stored in piles and/or boxes of the same type or production strategy of the steel mill, ready to be reused in the production cycle.

2.4.2 Furnace loading and melting in the electric steel furnace (EAF)

Scrap loading, additives

The scrap is then transferred into large baskets used to load the furnace; the baskets are filled by using three overhead cranes equipped with special magnets and claws. From the scrapyard, the baskets are transferred to the electric furnace area via automatic transfer wagons and from here, by using special cranes, they are loaded into the furnace.

The packaging of the baskets, or the sequence of the different types of scrap loaded into the baskets themselves, is carried out by an operator (crane operator) who, by reading an electronic device directly installed on the cranes, executes the pre-loaded recipes; these recipes, or the sequence divided by types and weight of the scrap to be loaded, are used to appropriately package the basket according to the product to be made.

In the melting process, in addition to scrap, auxiliary raw materials and additives are also used, such as lime, coal and ferroalloys; for managing these materials, TPP has fitted modern silage systems over time and the transfer from storage to the furnace takes place through pneumatic transport or through suitably covered and aspirated conveyor belts; this has made it possible to automate handling and minimise the dispersion of dust within workplaces.

Melting

The melting of scrap occurs due to the thermal energy generated by the electric arc between the graphite electrodes and the scrap itself and is assisted by burners powered by natural gas and oxygen.

The furnace has the capacity to hold 100 tonnes of liquid steel and completes the melting cycle in about 40 minutes.

Over the years, TPP has fitted advanced supervision systems that allow it to continuously manage all phases of the melting process, optimising and minimising the energy requirement needed for all the operations resulting from the melting process.

These systems also make it possible to continuously control and monitor all the operating parameters relating to dust extraction, filtration and reduction systems in order to ensure full compliance with environmental requirements.

During all phases of the melting process, all the parameters required by the relevant legislation on EMS (Emission Monitoring System) are also continuously monitored; these systems allow operators, also through control panels and dedicated alarms, to take preventive action in the event of any alarms, adopting all the provisions of the relevant procedures.

These systems allow continuous control and prevention of the possible presence of radioactivity during the melting process.
This type of scenario, which has never occurred at the San Zeno Naviglio TPP plant, was considered and subjected to careful analysis that led to establishing procedures for stopping production, keeping staff and systems safe and alerting the Competent Authorities.

Upon completion of the melting process in the furnace, molten steel is obtained at about 1640°C and primary slag.

2.4.3 Slagging and tapping

At the end of the melting, before the tapping, the slag produced by metallurgy, and which is located in the upper part of the liquid bath, is removed by means of a natural run-off that takes place by tilting the furnace towards the slag door and spilling, by falling, the material into large containers, called tanks, positioned at a lower level than the furnace; at the end of each casting, the tank is then removed and taken to a special area called a slag area.

At the end of the slagging, the liquid steel produced during the melting phases and contained inside the tank is "tapped" by means of a pouring operation through a casting hole, in a ladle, previously heated and positioned at a lower level than the furnace; the pouring takes place by tilting the furnace from the opposite side to the slag door.

All the steel tapped in the ladle is then transferred, by special overhead cranes, to the subsequent refining processes at the ladle furnaces (LF and LF twin).

In line with the objective of the Duferco Travi e Profilati group, which focuses on applying the principles of the Circular Economy and therefore also on constantly implementing the reduction process for waste and rubbish generated by processing, at the San Zeno Naviglio plant, a project was developed and implemented to recover the slag produced during the melting process (black slag).

In fact, the slag poured from the furnace and collected still as liquid at a temperature of about 1500°C in special containers called tanks is removed by special means and taken to a dedicated area, called the slag area; here, through controlled tipping, it is poured and cooled by spraying it with water jets.

The accumulated slag box is regularly eroded and subjected to deferrisation and screening operations, processes aimed at obtaining the fractions certified as a by-product called Blackstone.

The material obtained is isolated by forming a suitably identified batch, from which parts are taken to be subjected to environmental and geotechnical conformity analysis, as required by the test plan in the manufacturing manual.

The outcome of this analysis will help qualify the material as a by-product (Blackstone) or as waste; the material inside the warehouse, suitably stored and identified, after loading onto vehicles, is then sent to a suitable destination, whether it is a by-product or waste, following all the provisions of current legislation.

2.4.4 Secondary metallurgy

After tapping, the ladle, containing liquid steel, is transferred to the refining process at the Ladle Furnace (LF) where, through the addition of additives and ferroalloys, the steel is analysed in accordance with regulations and the characteristics required by the customer; the refining process also heats the steel, through the electric arc, designed to bring the steel to a suitable temperature for the subsequent continuous casting process.

In order to implement the process more and more through the efficiency of the systems and the adoption of new technologies, a new Ladle Furnace (LF Twin) was developed and installed at the San Zeno Naviglio plant in 2019, which allows the transfer of ladles directly from the melting furnace (EAF) to the refining station (LF Twin), without having to use any overhead crane movement.

This investment has helped produce a series of benefits for the entire organisation; in fact, thanks to this new plant, the handling of steel is easier, safer and more efficient and this has helped to further reduce temperature losses and optimise the energy requirements needed for secondary metallurgy processes.

Moreover, since 2014, TPP in San Zeno Naviglio has also produced types of steel

suitable for use in the Automotive, Oil & Gas and Energy sectors.

Due to the special characteristics required for use in the sectors above, ladle steel is subjected to a further treatment called "Degassing" (VD), i.e. a process designed to reduce the percentage of gaseous elements (such as nitrogen, hydrogen and oxygen); the steel resulting from this special treatment has a significantly higher degree of cleanliness, which makes it suitable even for tough and heavy-duty uses.

2.4.5 Continuous casting

Liquid steel, after secondary metallurgy treatment, is sent to the casting plants where it undergoes the solidification and shaping process.

At the TPP plant in San Zeno Naviglio, there are two continuous casting plants (CC1 and CC2) that respectively have four and six casting lines at the same time and that produce blooms, billets and pre-shaped products (for a total of 12 different sections) depending on customer requests and applications.

Continuous casting takes place through the transfer of steel, in a continuous and controlled way (protected casting), from the ladle to the tundish and from the tundish to the different casting lines where, inside the ingot moulds, the cooling, solidification and shaping process begins, obtaining the shape according to the set section.

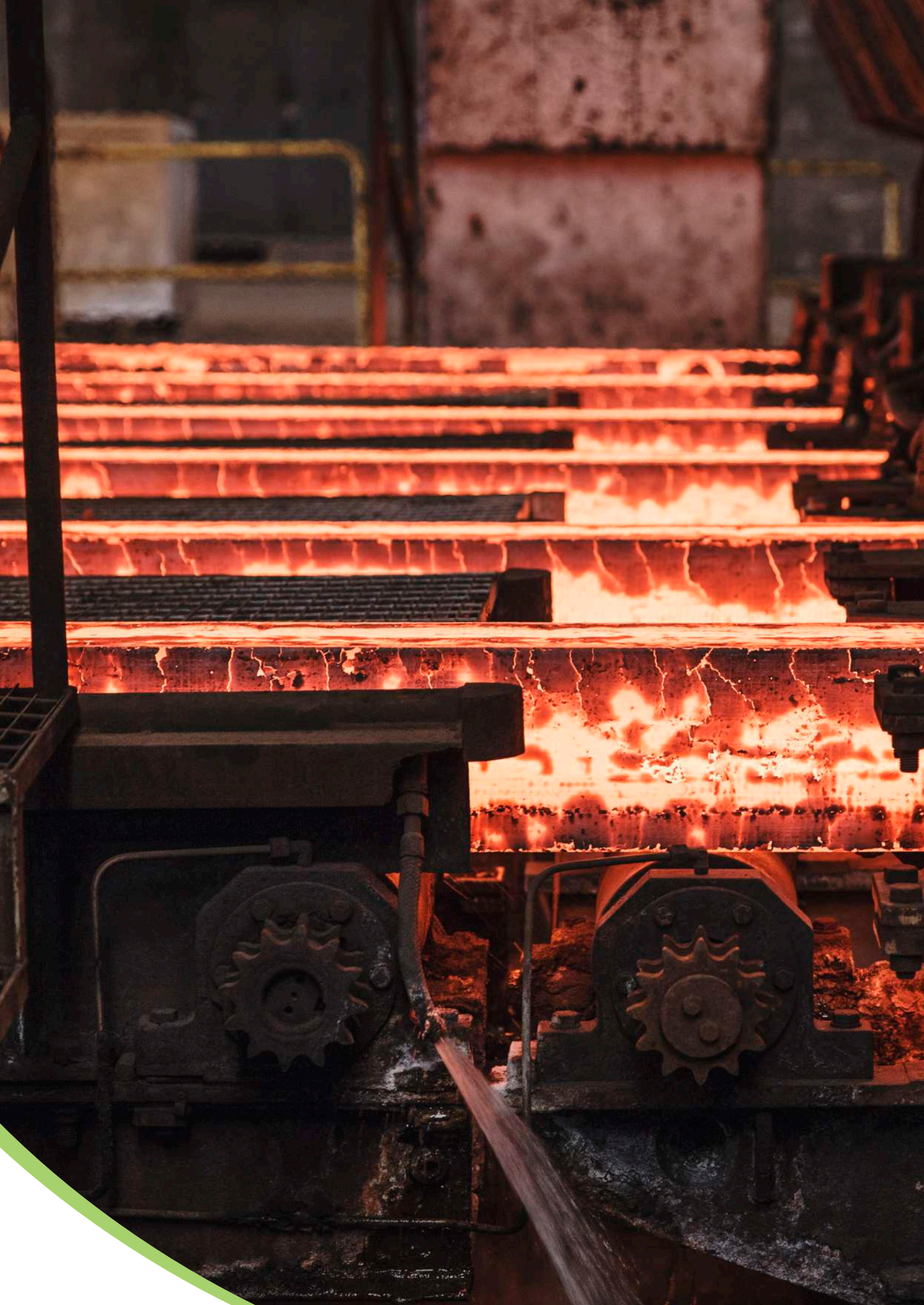
The semi-finished products leaving the casting machine are cut to size with oxycutting, transferred to a cooling plate and then sent to the warehouses for subsequent quality control and testing.

2.4.6 Storage and shipping

Cooled semi-finished products, identified beforehand, are sent to the storage areas and properly stacked.

Here the finished product awaits the completion of all technical and analytical checks, carried out in the internal laboratories and aimed at ensuring the chemical/physical conformity of the products.

Once the test has been successfully passed, the material is then prepared for shipment to the end customer; shipment can take place, after loading by overhead crane, by truck or by rail.



3. REGIONAL FRAMEWORK

The area where the plant is located stretches across two Municipalities of the Province of Brescia, namely the Municipality of San Zeno Naviglio, where almost the entire existing industrial-production site (the Steelworks) is located, and the Municipality of Poncarale where the new beam rolling mill will be built instead.

Regarding the existing conditions at the time of drafting this Environmental Statement, the part in the municipality of Poncarale is marginal compared with the total and, from a strictly environmental point of view, it shows a properly authorised well aimed at extracting water to be used for spraying the yards, and the final part of the railway connection exclusively for manoeuvres for transporting the finished product.

The entire area dedicated to present and future industrial activity is located on the outskirts at a distance of about 2 km from the centre of the Municipality of San Zeno Naviglio, and about 2 km from the centre of the Municipality of Poncarale; the site is part of an area intended for purely industrial/artisanal use, in a predominantly agricultural landscape, served by roads and railway lines.

In fact, the two Municipalities are made up of historic centres around which the main urbanisation has developed, consisting of residential buildings, with industrial and craft activities settled on the outskirts; most of the unurbanised region, on the other hand, is characterised by the rural landscape which primarily includes areas mainly intended for agriculture and livestock breeding.

The area, bordered to the east and west by roads (SS 45 Bis) and railways (Brescia Cremona line), a short distance from the Brescia Sud motorway exit of the A4 Milan-Venice motorway, and the A21 Milan Piacenza motorway

connection, has a strategic position from a logistical point of view, a position that allows all heavy road traffic to have no impact on the inhabited centres; moreover, the proximity of the local railway station of San Zeno Naviglio has directly connected the plant, which can therefore also take advantage of the railway line for a significant part of its logistics.

According to the regulatory plan currently in force in the municipality of San Zeno Naviglio, the area of the Travi e Profilati di Pallanzeno S.p.A. plant is classified as a "Zone D2 Artisanal and industrial production area, consisting of settlements typically aimed at production, large or medium-sized small aggregates in similar groups of buildings recognisable as part of the developed fabric".

The plant complex borders other D2 Zones on the North, South and West sides while to the East it borders:
Green zone E2 – areas for equipment used for production, commercial and management sites (connecting roads used for the artisanal zone).

The Regional Government Plan of the Municipality of Poncarale, which will build major works relating to the construction of the future beam rolling mill, is currently undergoing major transformations for this new project.

3.1 Soil and subsoil

The morphology of the Brescia plain upon first analysis can be divided into three large areas: High Plain, Medium and Low Plain; the investigation area located between the Municipality of San Zeno Naviglio and the Municipality of Poncarale is located in the transition area between the medium and high plain.

The morphology of the region is characterised by a general "monotony" and by the absence of valuable morphological features, in an almost completely flat environment, at an

average height from ground level of about 105 metres above sea level.

From a geological point of view, the area in question belongs entirely to the formation of the "Fluvial-Glacial and Fluvial Floods", mainly with sandy and loamy soils, with a layer of brownish decay not that thick, which constitute the medium plain downstream of the spring areas.

The entire area where the production plant is located has no restrictions in terms of landscape or hydrogeology, it does not interfere with protected natural areas, sites of the "Natura 2000 Network", landscape guide trails or scenic roads and, more generally, not even with landscapes of significant interest; it is not affected by river areas marked out by the Hydrogeological Structure Plan of the Po River basin.

3.2 Acoustic zoning in the region

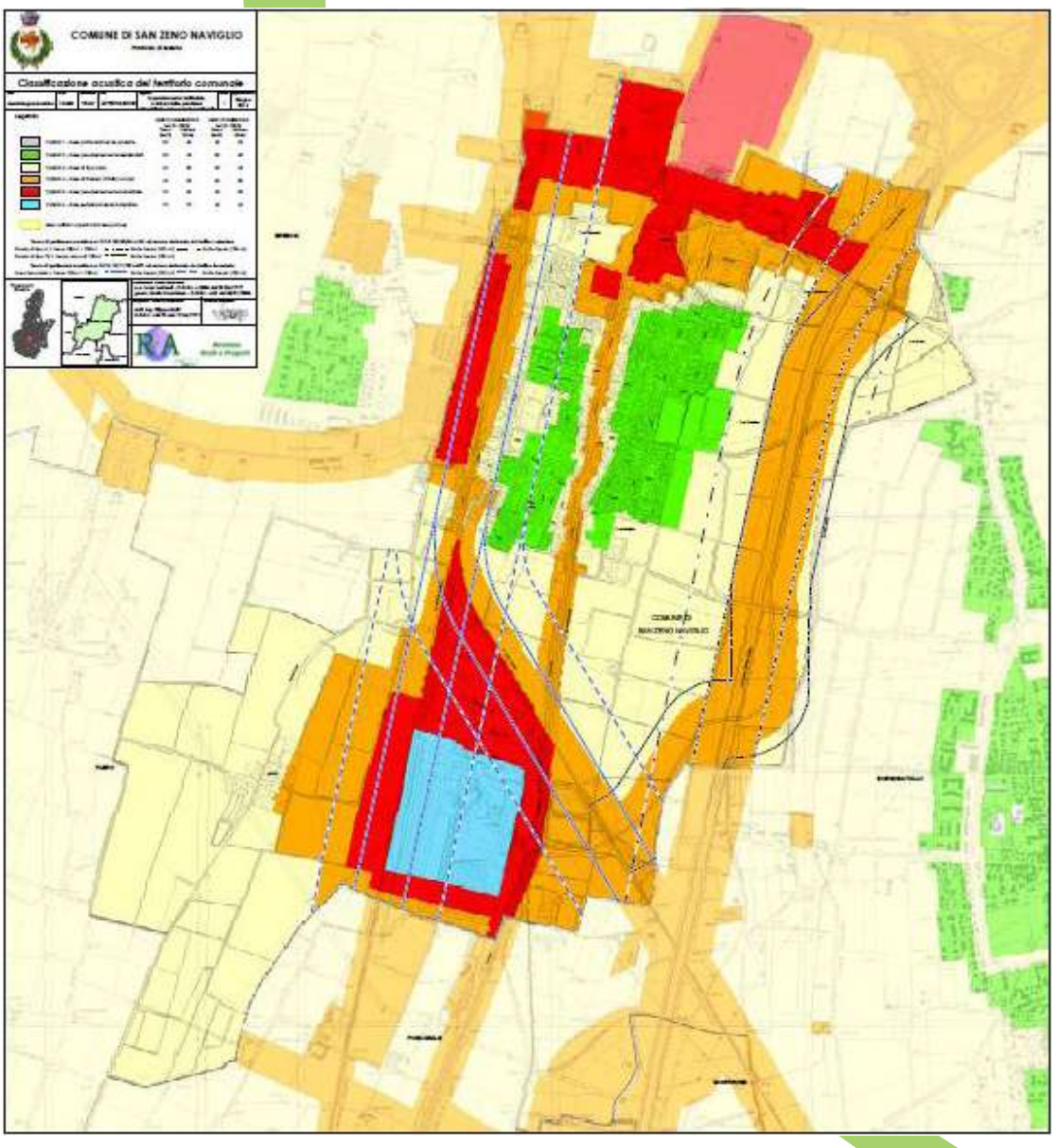
Based on the provisions of the applicable legislation on noise pollution, the regional municipal area of San Zeno Naviglio, where the existing plant is located, (Steelworks) is classified in Class VI "exclusively industrial".

The plant is also bordered to the:

North with class V, mainly industrial area;

- South with class VI, exclusively industrial area;
- West with class IV, area with intense human activity (road and rail);
- East with class IV, area with intense human activity (road and rail).

The details of this classification are illustrated in the figure below:



During the second half of 2019, an investigation was carried out in order to verify compliance by TPP with the noise limits in force.

Examining these results helped highlight compliance with noise emission and immission limits in force, both during the day and at night.

With regard to the new rolling mill, a Forecast Noise Impact study was carried out, aimed at identifying the appropriate technical measures to be used during the

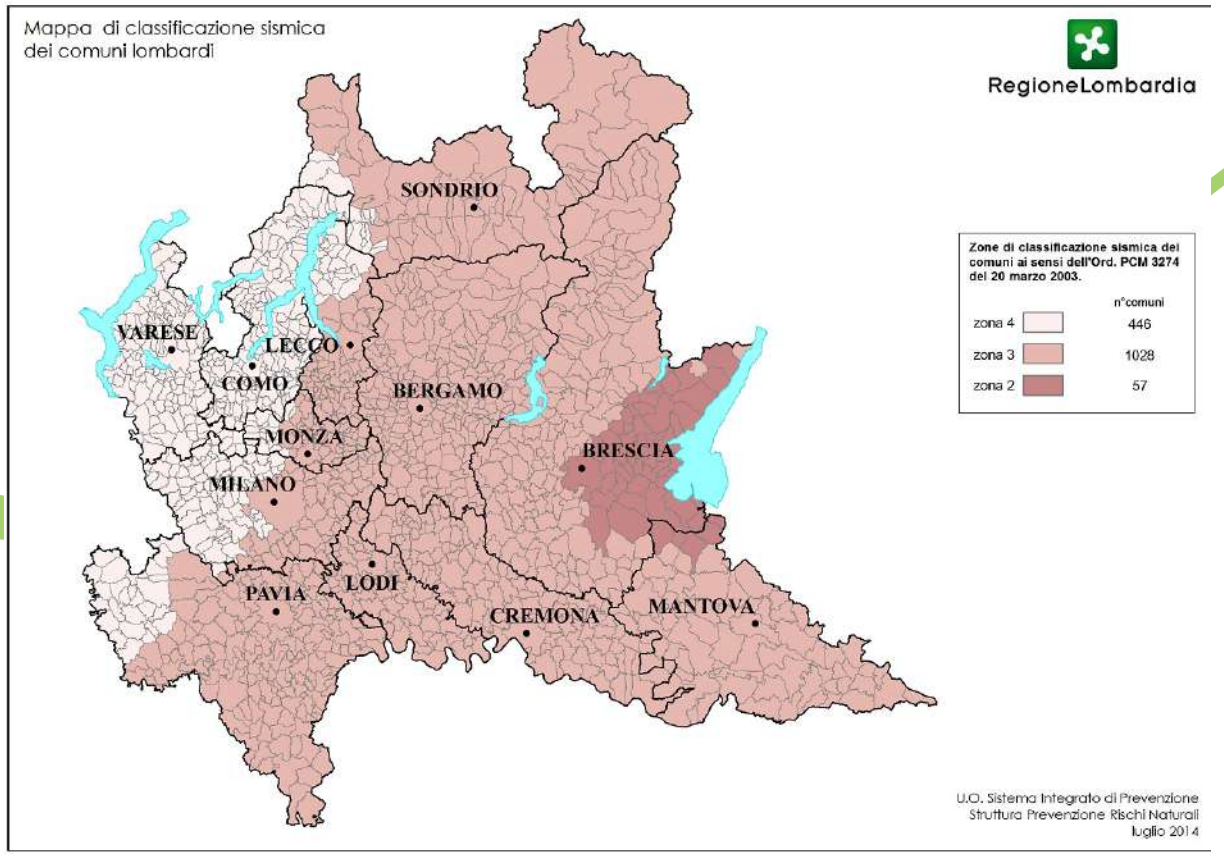
implementation phases of the project, measures that will help keep the level of future noise impact within the limits provided for by current legislation and by the acoustic zoning adopted by the Municipalities concerned.

3.3 Seismic activity in the area

The Lombardy Region, with Regional Government Decree No X/2129 of 11 July 2014, approved the new seismic classification of the Municipalities in the region; the document shows that the municipal region of the Municipalities of S. Zeno Naviglio and Poncarale falls within Seismic Zone 3.

This area has low seismic activity and consequently the municipalities included in this class experience small events.

For the municipal regions, there are therefore no specific requirements, from a seismic point of view, for designing plants and structures.



3.4 Weather and climate conditions

The weather conditions in the region of San Zeno Naviglio reflect the characteristics of the Po Valley.
In fact, it is relatively similar from a climate point of view, with limited rainfall (from 600 to 1000 mm), well spread out over the year, average annual temperatures between 11 and 14°C, frequent fogs, low wind with many hours of calm weather, high relative humidity and frequent storms.

In winter, the Po Valley area often has a layer of cold air near the ground that, in the absence of wind, causes the formation of frost and often persistent fogs that tend to disappear only in the afternoon.

The transition to spring is usually sudden and characterised by bad weather that causes fairly long periods of rain; as the season progresses, these conditions become increasingly stormy.

The storm activity reaches its peak in summer, when there is a high build-up of energy that triggers and supports these storms.

In autumn, bad weather often rolls in from the Atlantic, which can cause significant rainfall.

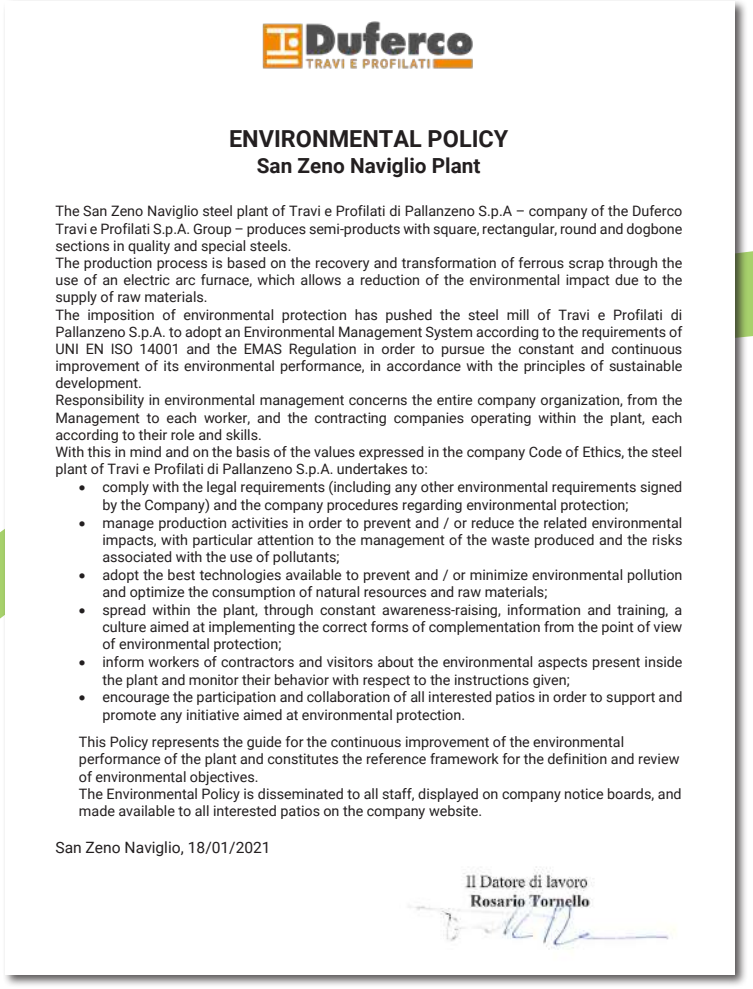
4. Environmental Management

4.1 Environmental policy

Duferco Travi e Profilati Group is aware of the need to make choices in line with the principles of sustainable development.

For this reason, it considers it essential to have an organisational system that allows it to best manage its processes, making a commitment to clearly define and communicate, internally and externally, its will and objectives through the Environmental Policy document revised on 1 September 2020 by virtue of the establishment of the new Employer.

This document, circulated internally and externally, is available on the Duferco Travi e Profilati website under the Sustainability and Safety section.



Duferco TRAVI E PROFILATI

ENVIRONMENTAL POLICY
San Zeno Naviglio Plant

The San Zeno Naviglio steel plant of Travi e Profilati di Pallanzeno S.p.A – company of the Duferco Travi e Profilati S.p.A. Group – produces semi-products with square, rectangular, round and dogbone sections in quality and special steels.
The production process is based on the recovery and transformation of ferrous scrap through the use of an electric arc furnace, which allows a reduction of the environmental impact due to the supply of raw materials.
The imposition of environmental protection has pushed the steel mill of Travi e Profilati di Pallanzeno S.p.A. to adopt an Environmental Management System according to the requirements of UNI EN ISO 14001 and the EMAS Regulation in order to pursue the constant and continuous improvement of its environmental performance, in accordance with the principles of sustainable development.
Responsibility in environmental management concerns the entire company organization, from the Management to each worker, and the contracting companies operating within the plant, each according to their role and skills.
With this in mind and on the basis of the values expressed in the company Code of Ethics, the steel plant of Travi e Profilati di Pallanzeno S.p.A. undertakes to:

- comply with the legal requirements (including any other environmental requirements signed by the Company) and the company procedures regarding environmental protection;
- manage production activities in order to prevent and / or reduce the related environmental impacts, with particular attention to the management of the waste produced and the risks associated with the use of pollutants;
- adopt the best technologies available to prevent and / or minimize environmental pollution and optimize the consumption of natural resources and raw materials;
- spread within the plant, through constant awareness-raising, information and training, a culture aimed at implementing the correct forms of complementation from the point of view of environmental protection;
- inform workers of contractors and visitors about the environmental aspects present inside the plant and monitor their behavior with respect to the instructions given;
- encourage the participation and collaboration of all interested patios in order to support and promote any initiative aimed at environmental protection.

This Policy represents the guide for the continuous improvement of the environmental performance of the plant and constitutes the reference framework for the definition and review of environmental objectives.
The Environmental Policy is disseminated to all staff, displayed on company notice boards, and made available to all interested patios on the company website.

San Zeno Naviglio, 18/01/2021

Il Datore di lavoro
Rosario Tornello

4.2 Environmental Management System

The TPP San Zeno Naviglio steelworks is equipped with an Environmental Management System (EMS) organised and certified according to the requirements of standard ISO 14001 and works to continuously improve its effectiveness over time.

The EMS is organised in such a way as to be constantly updated in line with regulatory developments and organisational changes, so as to improve the company's environmental performance in a context of transparency towards internal and external stakeholders.

The Environmental Management System is integrated with the safety and quality system, certified respectively according to the requirements of the UNI ISO 45001:2018 and UNI EN ISO 9001:2015 standards.

TPP has decided to develop a Safety Management System for the prevention of major accident risks, the effective implementation of which is aimed at ensuring that the objectives set out in the policy are achieved, constantly monitored and renewed with a view to continuous optimisation.


IGQ

CERTIFICATO
CERTIFICATE
IGQ 2O11

Si certifica che il sistema di gestione qualità di:
We hereby certify that the quality management system operated by:
Travi e Profilati di Pallanzeno Spa

nelle seguenti unità operative:
in the following units:
2) Sede e stabilimento di Pallanzeno - Via Sempione, 7 28884 Pallanzeno VB
1) Stabilimento - Via A. Diaz, 248 25010 San Zeno Naviglio BS

è conforme alla norma:
is in compliance with the standard:
UNI EN ISO 9001:2015

per le seguenti attività:
for the following activities:
IAF: 17

1) Fabbricazione di blumi, billette, tondi e beam blank da colata continua, in acciai non legati e legati - 2) Fabbricazione di travi, angolari, larghi piatti e profili speciali in acciaio laminati a caldo

1) Manufacturing of carbon and alloy steel blooms, billets, rounds and beam blanks by continuous casting - 2) Manufacturing of hot rolled beams, angles, wide flats and special steel profiles

prima emissione: 2005-12-23
first issued on:
emissione corrente: 2020-12-31
last issued on:
data di scadenza: 2023-12-31
valid until:
Data ultima revisione / Last revision date: 2021-01-18

Il Direttore
Roberto Pieroncini

IGQ - Via Giosuè Carducci 125/A - 20099 Sesto San Giovanni (MI) - Italy
www.igq.it - info@igq.it

ANAB IAF ACCREDIA SGQ N° 001A CISQ


IGQ

CERTIFICATO
CERTIFICATE
IGQ A2Q01

Si certifica che il sistema di gestione ambientale di:
We hereby certify that the environmental management system operated by:
Travi e Profilati di Pallanzeno Spa

Via A. Diaz, 248
25010 San Zeno Naviglio BS

è conforme alla norma:
is in compliance with the standard:
UNI EN ISO 14001:2015

per le seguenti attività:
for the following activities:
IAF: 17 - 24

Fabbricazione di acciaio mediante processi di recupero rottame, fusione, affinazione, degassaggio e colata continua. Produzione di aggregati (Blackstone) per opere civili e stradali.

Manufacture of steel by metal scrap recovery processes, smelting, refining, degassing and continuous casting. Production of aggregates (Blackstone) for civil works and road.

prima emissione: 2016-01-25
first issued on:
emissione corrente: 2018-12-31
last issued on:
data di scadenza: 2021-12-31
valid until:
Data ultima revisione / Last revision date: 2021-01-22

Il Direttore
Roberto Pieroncini

Certificazione rilasciata in conformità al Regolamento Tecnico ACCREDIA RT-09

IGQ - Via Giosuè Carducci 125/A - 20099 Sesto San Giovanni (MI) - Italy
www.igq.it - info@igq.it

ANAB IAF ACCREDIA SGA N° 015D CISQ


IGQ

CERTIFICATO
CERTIFICATE
IGQ S2R01

Si certifica che il sistema di gestione della salute e sicurezza sul lavoro di:
We hereby certify that the occupational health and safety management system operated by:
Travi e Profilati di Pallanzeno Spa

Via A. Diaz, 248
25010 San Zeno Naviglio BS

è conforme a:
is in compliance with:
UNI ISO 45001:2018

per le seguenti attività:
for the following activities:
IAF: 17

Fabbricazione di acciaio mediante processi di recupero rottame, fusione, affinazione, degassaggio e colata continua. Produzione di aggregati (blackstone) per opere civili e stradali

Manufacture of steel using scrap recovery processes, smelting, refining, degassing and continuous casting. Production of aggregates (Blackstone) for civil works and road

prima emissione: 2017-01-26
first issued on:
emissione corrente: 2019-12-31
last issued on:
data di scadenza: 2022-12-31
valid until:
Data ultima revisione / Last revision date: 2021-01-22

Il Direttore
Roberto Pieroncini

IGQ - Via Giosuè Carducci 125/A - 20099 Sesto San Giovanni (MI) - Italy
www.igq.it - info@igq.it

ANAB IAF ACCREDIA SCR N° 011F CISQ

4.3 ITALIAN LEGISLATIVE DECREE NO. 231/2001 – The company's organisational and management model (MOG 231/2001), supervisory body and code of ethics

Italian Legislative Decree No 231 of 8 June 2001 "Regulations on the administrative liability of legal persons, companies and associations even without legal status" has introduced into our organisation a system of administrative liability for companies or legal persons including in criminal matters.

The Board of Directors of Travi e Profilati di Pallanzeno S.p.A. (TPP) adopted, on 12/06/2013, an organisation, management and control model (hereinafter the Model) - as required by Italian Legislative Decree No 231/2001 - in order to prevent unlawful conduct and to relieve the Company from the administrative/ criminal liability applicable in the event that a potentially punishable offence is committed pursuant to the aforementioned Decree.

Compliance with the Company Model is one of the obligations deriving from the employment relationship pursuant to Article 2106 of the Italian Civil Code.

A Body has also been established at the Company with supervisory and control duties (hereinafter the Supervisory Body or, more simply, "Body" or "SB") to ensure the operation, effectiveness, adequacy and compliance with the Model adopted by the Company, in order to prevent any crimes for which it may be held administratively liable, in application of the provisions of Italian Legislative Decree No 231/2001, concerning "Regulations on the administrative liability of legal persons, companies and associations even without legal status, pursuant to Article 11 of Italian Law No 300/2000" (hereinafter the "Decree").

In performing its duties, the Body must be based on the principles of autonomy and independence.

To guarantee the principle of neutrality, the Body has a top hierarchical position,

reporting and answering directly and exclusively to the Board of Directors.

In June 2013, the TTP Code of Ethics was also adopted, in accordance with Italian Legislative Decree No 231/2001, which forms a collection of the general principles and rules of conduct which the Company must follow.

This document aims to explain the ethical principles that it adheres to, based on fairness, transparency and the strictest compliance with the laws in force, all essential prerequisites for achieving the economic, productive and social objectives that the company pursues.

Finally, it should be remembered that the Code of Ethics constitutes a contractual addendum to the Italian collective bargaining agreement (CCNL).

Any conduct contrary to the spirit of the code of ethics is sanctioned in a manner proportionate to the seriousness of any infringements committed, in accordance with the provisions of the disciplinary system defined by Organisational Model 231/2001, which this code of ethics upholds and forms an integral and substantial part of it.

4.4 Internal and external communication

The Duferco Travi e Profilati group has an approach aimed at openness, participation and sharing of the group's data and information with employees, partners, customers, suppliers and its community, including control bodies, institutions and public administration.
The company then communicates with stakeholders through various channels.
The digital channels used include:

- the group website (www.dufercotp.com) where corporate content is published and where certificates, company brochures, news and press releases are periodically updated;
- emails that facilitate internal and external communication;
- LinkedIn, a strategic social channel used for communications on new

technologies adopted by the company, sustainability, presence in the region and useful information;
- Telegram, an instant messaging app that facilitates internal communication;
- Daily press review

Among the traditional channels, the Duferco Travi e Profilati group uses a company brochure to show the products of the group's plants, including the TPP steelworks.

There is also a Duferco Group Annual Report that contains information on the management performance and situation at all the companies in the Duferco Group, including those belonging to the Duferco Travi e Profilati group.

This report has been created with a section dedicated to the Sustainability Report that collects the group's non-financial information.
The group intends to communicate the principles of sustainable development and the protection of workplace health and safety in an ethical and transparent way, to build trusted relationships with the various internal and external stakeholders; the annual report and the sustainability report within it are available on the group's website **www.duferco.com.**

In addition to digital and traditional channels, the Duferco Travi e Profilati Group manages relations with the national and local press with the aim of conveying comprehensive information.

The company maintains a channel that is always open to customers, who are contacted about customer satisfaction surveys and met in person at trade fairs.

There are also opportunities to meet younger generations, who are invited to the group's plants to understand the processes and visit the steelworks in operation, opportunities that are aimed at training them for what could be their future in the iron and steel industry.

TPP is a member of several annual initiatives promoted by Confindustria, such as the PMI DAY, a day dedicated

to making young people aware of real life at companies.
The group considers the alternating school-work approach to be an excellent way to encourage and fast-track entry into the world of work by the youngest sections of the population.

In fact, TPP has the BAQ label for a quality alternating approach, issued by the Brescia Industrial Association to show the quality of the school-work alternating programmes carried out by companies; TPP also received confirmation for this recognition in 2019. These initiatives have been suspended since 2020 due to restrictions imposed by COVID-19.

The Duferco Travi e Profilati group has always had an eye on the community.

As an Emergency partner since 2017, it has donated the beams required to build the support structure of a centre of excellence for paediatric surgery in Entebbe, Uganda; the project, developed by Renzo Piano, makes the hospital a reference point for children with surgical needs from all over Africa, which will provide free care; the construction will be built with a special focus on eco-sustainability, as it will be built with 2,600 photovoltaic solar panels.

In 2018, Duferco Travi e Profilati financed the creation of a multi-purpose centre at the public park of the Municipality of San Zeno Naviglio; the project was created as part of a path that will see the Company engaged for years in projects to support social activities in the Municipality of San Zeno Naviglio.

TPP supplied steel for the construction of the beams, helping build the new bridge over the Polcevera River in Genoa.

The collaboration between the Duferco Travi e Profilati Group and the region is already taking place with many joint activities, such as the agreement in place with the Regina Margherita Nursery School, which in addition to allowing the company's employees to access the service at a reduced rate,

also supports activities dedicated to the educational development of children, the sponsorship of youth sports teams, certain local magazines and support for the Merchants Association of Naviglio.

For this reason, Duferco Travi e Profilati sets its primary objective as its growth with respect for the community and the environment, focusing primarily on young people and the region, as testimony of how an industrial company can be an example of responsible social and environmental development.

5. Assessment of the context

Travi e Profilati di Pallanzeno 's work is part of a context that generates and/or experiences the involvement of stakeholders (shareholders, staff, suppliers, etc) which, depending on the activity or moment, can change, or help change, the internal and/or external context of the Plant.

To understand the internal context, the Organisation takes into account factors such as:

- The Group's guidelines and strategic lines;
- The health and safety of workers;
- The economic/financial situation of the company;
- The state and prospects for development of property and management;
- The state and prospects for development of systems and infrastructures;
- The Organisational Structure;The company climate;
- The adequacy, awareness and training of staff;

While the **external factors** it takes into account are:

- Environmental conditions (relating to climate, air and water quality, use and possible contamination of soil, etc);
- The applicable mandatory rules and provisions;
- The geographical location of the plant and related problems;
- Suppliers and outsourcing;
- The market and customer expectations;
- Social and cultural environment in which the Organisation is located;

The correct analysis of **internal factors** and the assessment of their influence (both positive and negative) allow the Organisation to highlight:

- The strengths for achieving the

objectives;

- The weaknesses detrimental to these objectives;
- The analysis of the external context, on the other hand, helps detect:
- The risks, i.e. the external conditions that could cause damage to the Organisation and consequently to achieving the expected results;
- The opportunities, i.e. the external conditions that are useful for the development of the Organisation and therefore for achieving the expected results.

Each Department Manager at the Organisation carries out analysis of the context and the expectations/ needs of the stakeholders under their responsibility during the Management Review, in order to then share the results with General Management and with all the other company departments.

5.2 Valutazione delle parti interessate

The Organisation has identified its stakeholders and analysed their needs and expectations; they have been motivated by different interests, sometimes not clearly expressed, and are susceptible to change over time.

Stakeholders	Needs and expectations
Customers	Their satisfaction derives first and foremost from optimised company processes, which make it possible to maximise the quality of the products and services provided and to maintain low prices, in line with those of our best competitors; however, there is an increasing demand for an organisational system (better if certified) capable of guaranteeing optimal management of resources and increasing environmental protection.
Ownership	As always, its objective of sustainable company profitability has never veered away from high ethical conduct, respectful of the environment, safety and all other applicable mandatory requirements.
Employees and related Trade Union Representations	Taking for granted the importance of a correct and transparent wage policy, it is important for them to have a system that - through optimal environmental management - ensures a clean, comfortable working environment that is as free as possible from health risks; at the same time, a plant that is attentive to the needs of stakeholders offers greater guarantees for the continuity of the business and therefore for occupational safety.
Suppliers/Contractors	The request for the establishment of products/services that respect the environment and the related legislative provisions favours the competitiveness of the supplier companies that are more sensitive to these issues (which are usually also the most reliable and qualified companies, even if perhaps a little more expensive than the others). This triggers a virtuous mechanism of collaboration with suppliers to exchange knowledge and identify common strategies, aimed at improving the performance of company processes, mutual benefit and continuity of the business relationship.
External community	Its expectation is a company commitment that aims to maintain the natural balance of all factors, ensuring the development and improvement of the quality of life, in compliance with current regulations and aiming to prevent and reduce risks and negative impacts.
Institutional bodies (Municipality, Region, Control Bodies, etc)	Beyond compliance with the mandatory requirements, it is certainly positive for Institutional Bodies to have a plant whose objective is a Management System in line with the requirements of the ISO 14000 and EMAS series standards and that therefore, also from an environmental point of view, guarantees jobs without creating discontent in the community.
Banks and insurance companies	They do not always express it as a preferential requirement, but in fact they give greater credibility (and therefore more advantageous conditions) to companies that rigorously address issues outside their core business from a point of view of structured legislative compliance in line with the trends of the most modern industry (such as environmental management for the plant in S. Zeno Naviglio).

Table 2

In the annual Management Review, each Department Manager analyses and highlights, where appropriate, the modified expectations of stakeholders (interested parties), requesting, if necessary, any adjustments by the Organisation according to the new objectives identified (e.g. changes in the Management System, plant modifications, opportunities to achieve new certifications, etc).

This activity is also carried out within the Management Review in order to ensure timely sharing with the General Management and all other departments.

5.3 Assessment of direct and indirect environmental aspects

The Organisation highlights the direct environmental aspects related to the production carried out by Travi e Profilati Pallanzeno S.p.A., over which the Organisation has complete control, and the indirect ones, over which it has only partial control and/or can only partially exercise its influence.

For each environmental aspect (e.g. energy consumption, emission of pollutants into the atmosphere, etc), the potential impacts generated on the environment (e.g. depletion of natural resources and air pollution) are identified.

In order to run a correct environmental programme, and a subsequent plan for reducing and controlling the relative impacts, the Organisation has adopted a semi-quantitative methodological approach (matrix method) allowing it to assess its significance, or relevance, under four distinct operating conditions:

- Normal operation: (Work is carried out under ordinary conditions, with the systems running properly);
- Abnormal operation: (Work not related to the proper production cycle, but still foreseeable);
- Emergency conditions: (Work carried out in emergency situations);
- Stopping and/or restarting systems:

(Work carried out during the shutdown and/or restart phases of the systems).

were significant under the different operating conditions downstream of the production process.

The following table summarises the direct environmental aspects that

Normal operating condition	
Environmental aspect	**Phase of the process**
Emission released	Melting
	Refinement
	Degassing
	Continuous casting
	Oxycutting
diffused emission	Melting
	Refinement
	Degassing
	Continuous casting
	Oxycutting
	Waste storage
Non-hazardous waste	Melting
	Refinement
Noise emissions	Storage
	Melting
	Refinement
	Degassing
	Continuous casting
	Oxycutting

Table 3

Abnormal operating conditions		
Environmental aspect	**Phase of the process**	**Anomaly**
Emission released	Melting	Filter malfunction for reducing emissions released
	Refinement	
	Degassing	
	Continuous casting	
	Oxycutting	
Waste water	Waste water treatment	Plant malfunction
Noise emissions	Melting	Plant malfunction
	Refinement	
	Degassing	
	Continuous casting	
	Oxycutting	

Table 4

Emergency conditions		
Environmental aspect	**phase**	**emergency**
Emissions released	Melting	Filtration system breakage
	Refinement	
	Degassing	
	Continuous casting	
	Oxycutting	
Diffuse emissions	Melting	Serious plant failures Fire/explosions Electrical black-out
	Refinement	
	Degassing	
	Continuous casting	
	Oxycutting	
Waste water	Waste water treatment	Filtration system breakage
Radioactive sources	Melting	Radioactive contamination from input materials
	Refinement	
	Waste storage	

Table 5

The table above does not highlight any environmental aspects related to the operating conditions for shutting down and/or restarting the systems as they are of little significance.

With regard to indirect environmental aspects (not directly controlled by the Organisation), the following table shows those that were significant at the time of drafting the Environmental Analysis:

Environmental aspect	Phase	Emergency
Radioactive sources	Raw material procurement	Radioactive contamination emergency from input materials
Material Supply	Raw material procure-ment	Hazardous substance spillage/storage/ transport emergency

Table 6

6. Environmental performance indicators

TPP bases its development on a process of continuous improvement aimed at optimising production processes and at gradually reducing the use of natural resources, auxiliary raw materials, other materials in general, as well as at a constant reduction in energy needs, directing its choices towards actions aimed at minimising the environmental impact, bringing in efficient technologies and organisational models.

This chapter shows the environmental performance of TPP from 2017 to JUNE 2021, expressing the results, where possible, through indicators that relate them to production (tonnes of finished products).

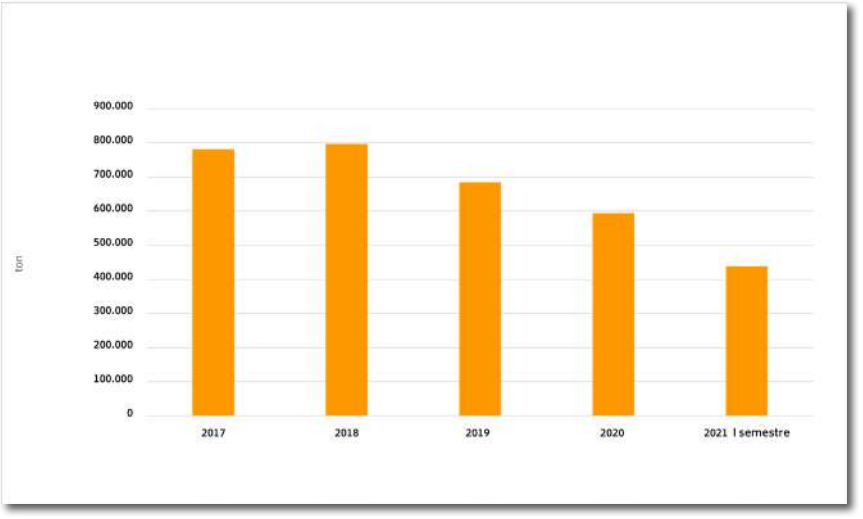
6.1 Production

The production data is shown below in absolute terms for the steelworks over the last five years, expressed in tonnes; we note a gradual and constant increase in production in the period taken into consideration, with a high point in 2018 which, with 796,619 tonnes, achieved the all-time record for the plant; the constant growth of production is essentially linked to a recovery in demand in the iron and steel market, a positive economic situation that lasted until 2018 but that has undergone a trend reversal starting from the first months of 2019 and that lasted for most of 2020, further penalised due to the interrupted activity (4 weeks) due to the lockdown as a result of COVID–19.

In the last quarter of 2020, production resumed returning to pre-Covid 19 levels on an upward trend, also recorded in the first half of 2021.

Actual production (ton)	Year
780,992	2017
796,619	2018
684,565	2019
593,544	2020
438,738	**2021 (1st six months)**

Table 7



Graph 1 - finished product

6.2 Raw materials

The main raw material for the production of the steelworks is iron scrap; in fact, the technology of the Electric Furnace represents a virtuous way of recovering waste material in perfect harmony with the provisions of the Circular Economy; the iron scrap recovered within the production cycle can come from domestic or foreign sources.

At the site, procedures have been implemented for the procurement of scrap classified both as End of Waste (Reg. EU 333/2011) and as waste or by-products.

TPP has developed a careful supplier selection process and a system of extensive, instrumental and visual checks, aimed at intercepting and

Raw materials	2017	2018	2019	2020	2021 1st six months
Iron scrap (ton)	852,692	863,697	751,958	669,578	498,880
Cast iron (ton)	19,724	31,858	21,560	10,239	5,198
Direct reduced iron (ton)	21,509	28,360	21,052	8,418	1,587
Coal - anthracite (ton)	14,703	12,244	10,753	7,998	5,587
Ferroalloys (ton)	15,636	15,892	13,042	11,003	8,209
Lime (ton)	42,701	44,531	37,433	33,101	25,212
Electrodes (ton)	1,826	1,584	1,420	1,117	850
Oxygen (km^3)	29,360	30,028	28,943	24,953	17,678
Argon (km^3)	637	975	757	565	354
Casting powders (ton)	170	293	312	400	284
Refractories (FE)	1,121	1,068	1,193	1,041	706
Ladle Refractories (ton)	2,411	4,858	3,654	3,143	2,228
CC Refractories (ton)	527	572	521	396	294

Table 8

rejecting any non-compliant materials before they can enter the production cycle.

In addition to scrap, the melting process also requires the use of auxiliary raw materials and additives, such as cast iron, ferroalloys, lime and refractories.

The table above summarises the consumption of the main raw materials in the relevant period. The growth trend in the consumption of raw materials and auxiliary raw materials in the two-year period 2017-2018, and the decrease during 2019, is exclusively due to the fluctuation in demand for steel on the domestic and international market, demand that led to constant growth in production, for the first three years considered, stopping in the first months of 2019 with a subsequent trend reversal

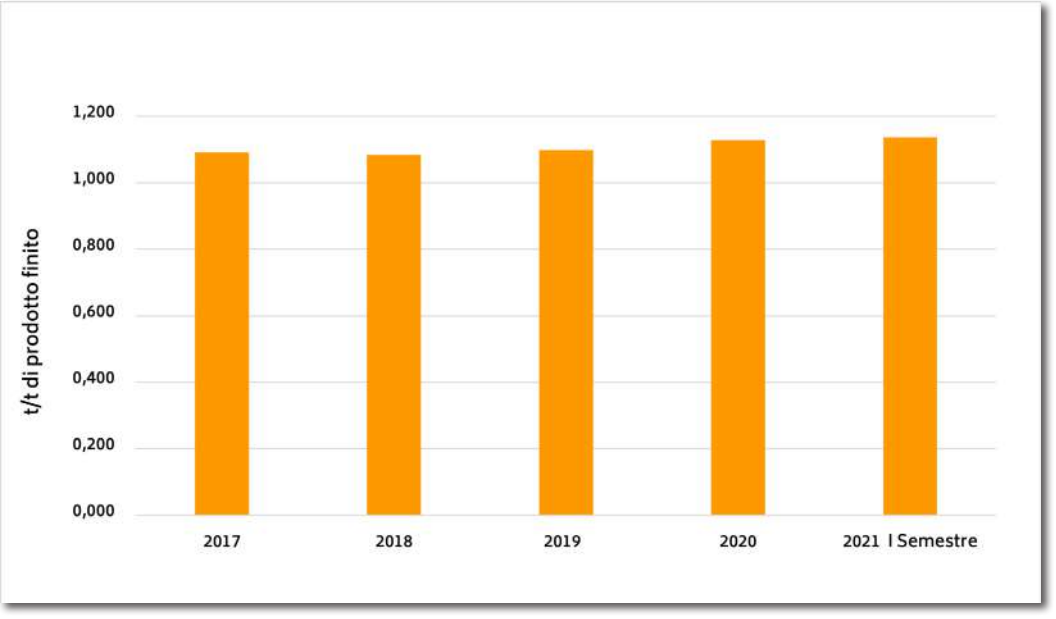
and consequent decrease in production, even more marked in 2020 due to the effect of COVID–19.

Production recovering from the last quarter of 2020.

Within this framework, the significance linked to the reduction in the consumption of direct reduced iron and cast iron during 2020 is caused by the market conditions that have pushed towards the production of ordinary steel.

During the first half of 2021, there were increases in raw material consumption, due to the progressive increase in production.

The following graphs show the trend of specific consumption of raw materials, oxygen and argon gas; you can see a substantially stable trend of specific consumption and, in any case, in line with what is described in the chapter on total consumption.



Graph 2 - Specific consumption of iron scrap

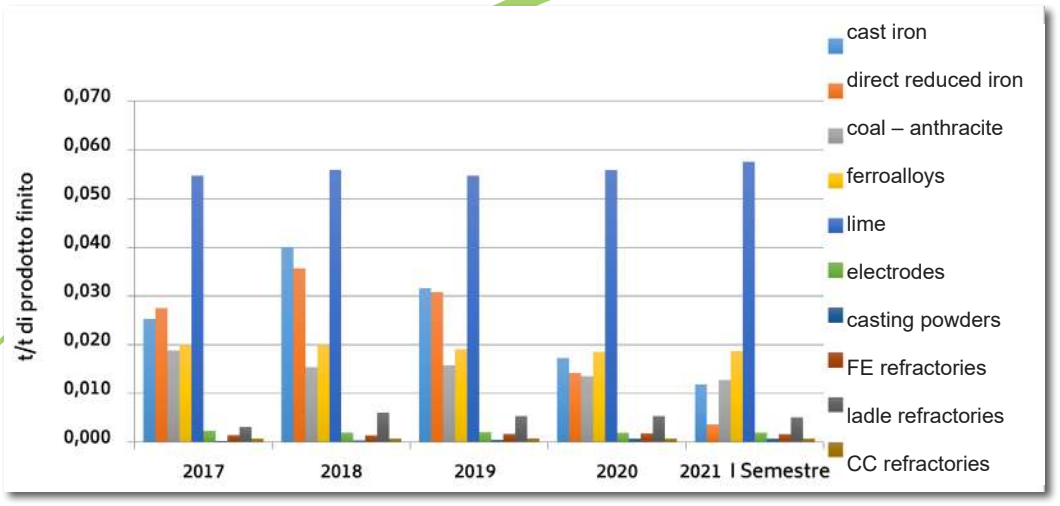


Grafico 3 - Specific consumption of raw materials

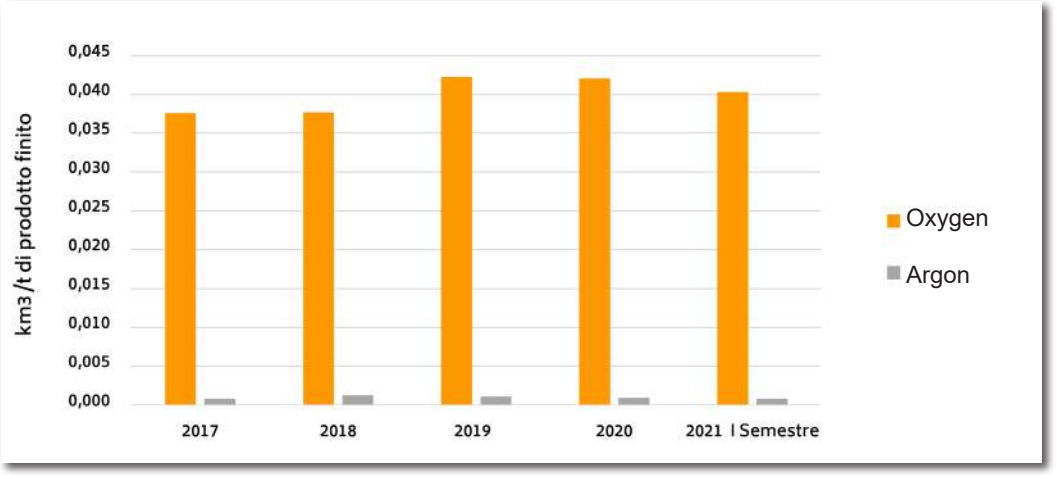


Grafico 4 - Specific consumption of oxygen and gas

6.3 Energy sources

The main sources of energy for production are:

- Electricity, mainly used as a power supply for EAF and LF/LF Twin furnaces;
- Natural gas, used as a power supply for EAF and LF/Twin furnaces and Continuous Casting;
- Diesel, used exclusively as a power supply for generating sets in the fire-fighting system and as fuel for handling equipment.

TPP, being an energy-intensive company, appointed an Energy Manager and carried out an Energy Audit in 2019.

In recent years, in collaboration with Duferco Energia, various energy efficiency projects have been carried out, such as the installation of 2 new burners for heating ladles with recovery technology.

The need for this project is due to the excessive consumption of methane GAS measured on the old burners, as well as operations and functionality that are now inadequate.

Currently, the next energy efficiency measures will involve replacing all the lights at the plant with next-generation LED lights in order to improve both safety in the workplace and electricity consumption, as well as to incorporate the considerations and improvement projects that emerged from the Energy Audit just completed.

The strong focus on environmental sustainability and energy efficiency sought by the TPP management in San Zeno Naviglio is not limited to monitoring and improving the existing plants, but forms the foundations for decisions linked to all future technological investments; it should therefore be noted that, for the project of the new beam rolling mill adjacent to the steelworks, the first Italian electric PPA (**Power Purchase Agreement**) on a wind farm has already been stipulated, which will supply more than 50% of the needs of the rolling mill with "green" energy.

Raw materials	2017	2018	2019	2020	2021 1st six months
Electricity (MWh)	450,957	463,507	389,522	328,731	237,289
Methane gas (m^3)	8,114,876	8,573,010	7,895,151	6,626,687	4,805,955
Diesel (kg)	22,073	19,053	17,646	17,523	11,897

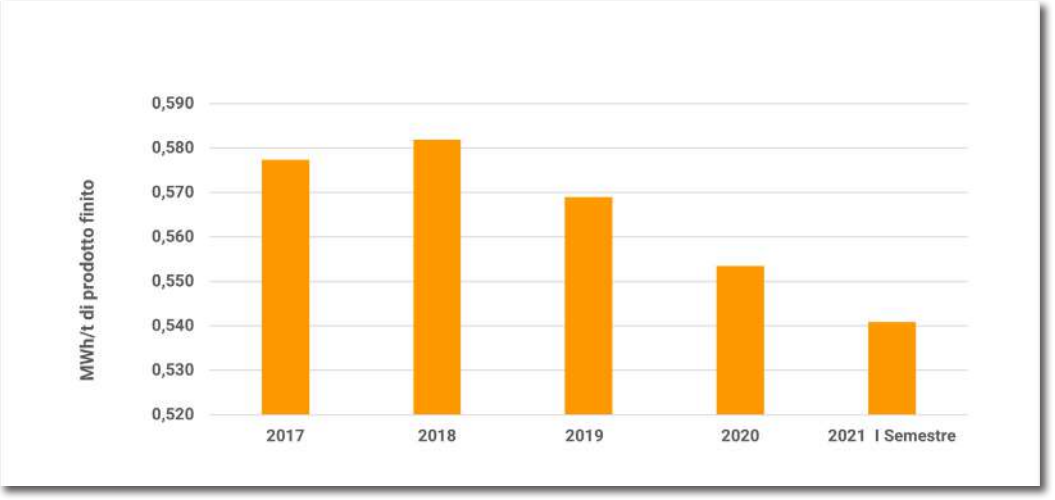
Table 9

Regarding the data on electricity and methane gas consumption, there was a gradual increase in absolute terms until 2018, linked exclusively to the increase in production; this data fell during 2020 as a direct consequence of the decrease in production, a more pronounced decrease than with electricity consumption.

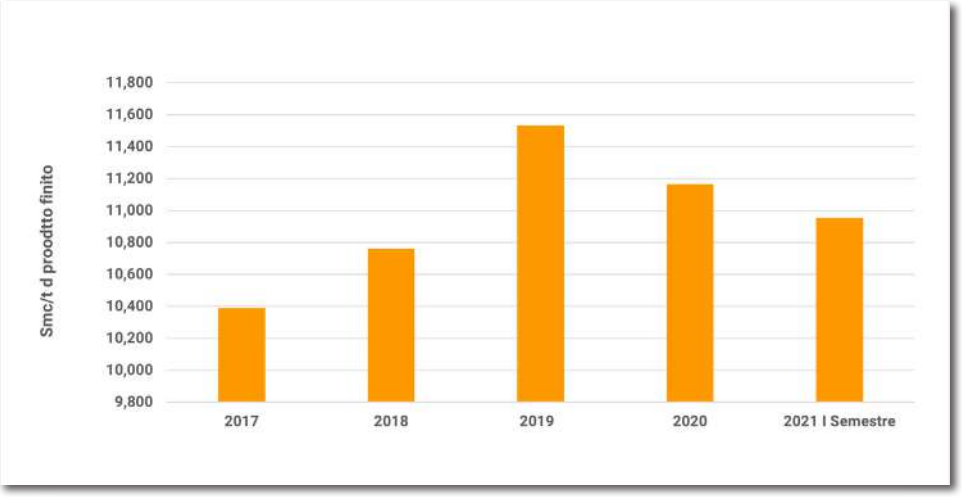
This phenomenon is justified by the fact that electricity is directly connected to the running of the plants and therefore directly experiences positive or negative changes, while the consumption of methane gas, also used for auxiliary processes (e.g. preheating plants), is negatively indexed as it is not directly proportional to production.

This correlation is fully confirmed by the data readings shown in the graphs for the specific consumption of electricity and methane gas.

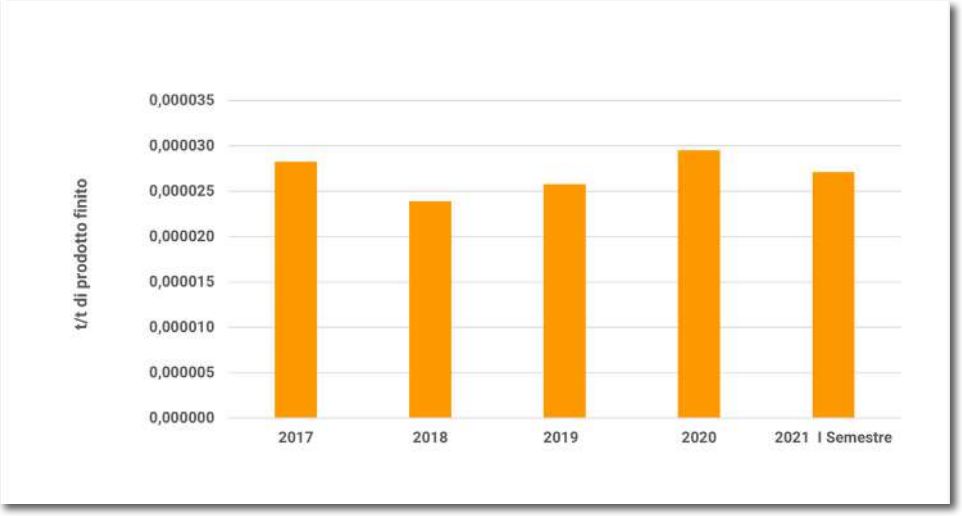
On the other hand, with regard to diesel consumption, it should be noted that consumption was taken into account from running emergency generating sets and from internal handling equipment exclusively used for TPP operations (steelworks).



Graph 5 - Specific consumption of electricity



Graph 6 - Specific consumption of natural gas



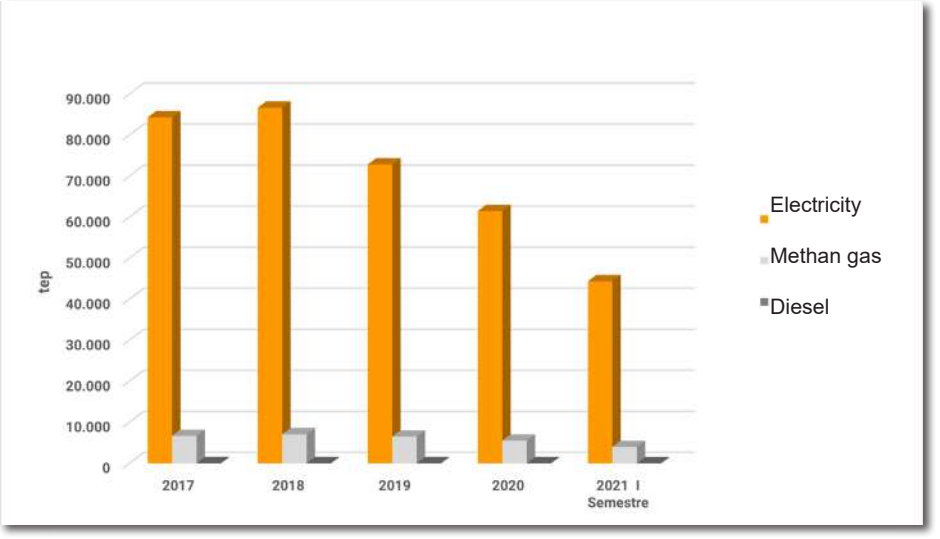
Graph 7 - Specific consumption of diesel

The energy consumption is shown below in tonnes of oil equivalent (TOE), calculated using the conversion factors set by FIRE (Italian Federation for Energy Efficiency).

TOE energy consumption

Type of energy	2017	2018	2019	2020	2021 1st six months
Electricity	84,329	86,676	72,841	61,473	44,373
Methane gas	6,695	7,073	6,513	5,540	3,965
Diesel	24	21	19	18	13
TOTAL	**91,048**	**93,769**	**79,373**	**67,031**	**48,351**

Table 10



Graph 8 - Energy consumption TOE

6.4 Water supply

The San Zeno Naviglio plant does not have a connection to the municipal aqueduct and therefore supplies all the water used for the production process and for civil needs through the use of 5 properly authorised wells.

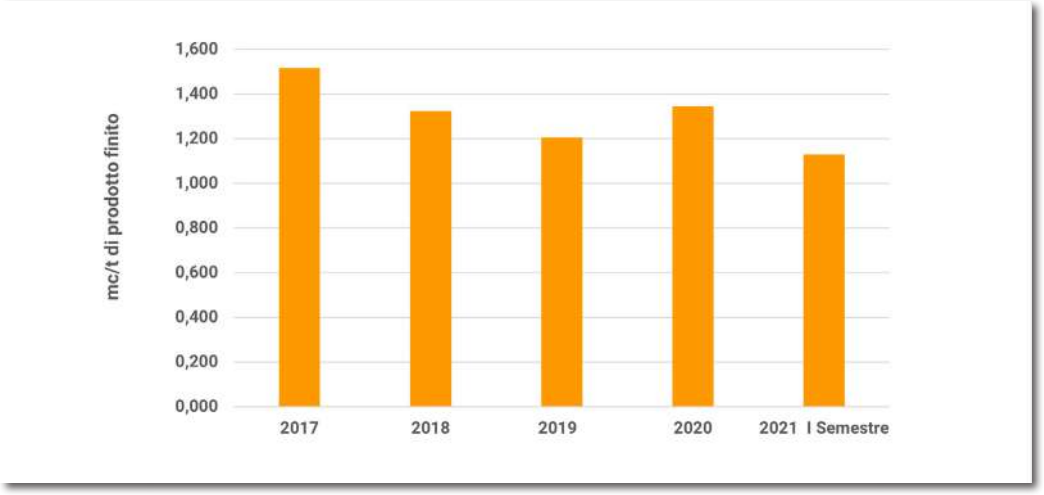
The water collected and used for the processes is drawn from two wells (of the three authorised) and is used for cooling the main systems (furnaces and continuous casting) and other minor uses, such as hydraulic control units, heat exchangers, cooling towers, etc.

In addition to the above, there is the collection, through two other properly authorised wells, of water suitable for use for civil purposes (canteen, changing rooms, etc).

With regard to water consumption, there is a positive trend (reduction in consumption) both in terms of total quantity and specific consumption compared with the tonnes of steel produced.

Type of water	2017	2018	2019	2020	2021 1st six months
Water taken from the well (mc)	1,183,776	1,054,706	825,062	798,751	494,943

Table 11



Graph 9 - Specific water consumption

The trend of water consumption is clearly improving, both in absolute terms and in terms of per capita consumption.

The reason for this can be found in a dedicated multi-year programme, set by Management, and aimed at:

- The gradual replacement, as much as possible, of water-cooled equipment and/or systems with others that use another type of special technology (e.g. air cooling);
- Studies and projects that use, as much as possible, the partial and/or complete recirculation of water for the process and/or ancillary activities;
- Increased monitoring of leaks in distribution pipes.
- The figure for 2020 is affected by the special maintenance carried out due to the interrupted activity (4 weeks) during the lockdown due to Covid–19.

6.5 Waste water

The plant, which is not served by the municipal sewage network, is properly authorised to discharge into the surface water body (Castrina River) the overflow of industrial waste water for cooling the furnaces and steelworks (S2 and S4 discharges).

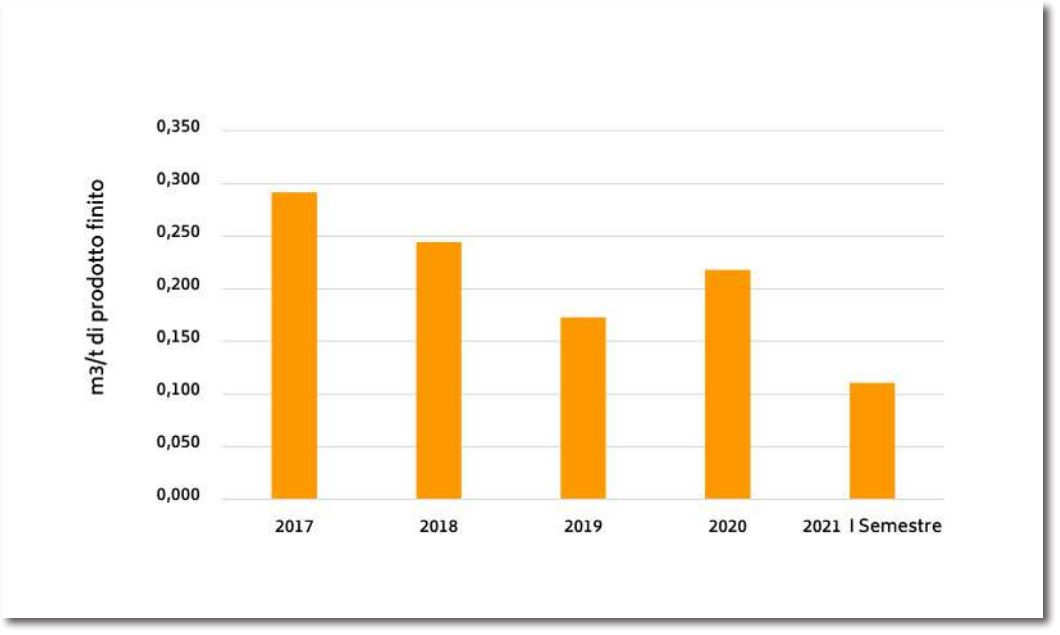
From the table below, we can see that the volume of water discharged overall from the two industrial discharges, has

significantly decreased, falling from 227,000 cubic metres in 2017 to 118,000 cubic metres. For 2019, as previously highlighted, the main reason was the improvements made aimed at saving water resources.

The data for the first half of 2021 confirms the decreasing trend.

Water	2017	2018	2019	2020	1st six months of 2021
Total water volume from waste water (m3)	227,777	194,734	118,127	129,538	48,573

Table 12



Graph 10 - Total water volume from specific waste water

In addition, the monitoring of industrial discharges shows that the desired elements, as required by the IEA prescriptive framework, are constantly and widely below the limits provided for by current legislation for both discharge points; this means that the system can be considered very efficient in treating the site's process water.

S2 discharge	pH	suspended solids	COD	Al	As	Cd	Cr	Fe	Mn	Hg	Ni	Pb	Cu	Zn	SO4	Cl-	Total HC
2017	7.8	<5	<15	<0.005	<0.01	<0.0001	0.005	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.0005	0.021	21	8	<2
2018	7.5	<5	<15	0.008	<0.01	<0.0001	0.01	<0.01	<0.01	<0.0001	0.013	<0.0001	<0.0005	0.02	30	10	<2
2019	7.9	<5	<15	<0.005	<0.01	<0.01	<0,01	0.015	<0.01	<0.0001	<0.01	<0.0001	<0.01	0.02	32	13	<2
2020	7.3	<5	<15	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.0001	<0.01	<0.01	33	10	<2
Limit values	5.5-9.5	80	160	1	0.5	0,02	2	2	2	0.005	2	0.2	0.1	0.5	1000	1200	5
Unit of measurement		mg/l	mg/l O2	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l

Table 13

S4 discharge	pH	suspended solids	COD	Al	As	Cd	Cr	Fe	Mn	Hg	Ni	Pb	Cu	Zn	SO4	Cl-	Total HC
2017	7.9	<5	<15	<0.005	<0.01	<0.0001	0.018	0.017	<0.01	<0.0001	<0.01	<0.0001	0.001	0.016	108	31	<2
2018	7.8	<5	16	0.006	<0.01	<0.0001	0.021	0.017	<0.01	<0.0001	0.02	<0.0001	<0.0005	0.014	101	59	<2
2019	7.8	<5	<15	<0.005	<0.01	<0.01	0.019	0.037	0.021	<0.0001	<0.01	<0.0001	<0.01	0.018	109	39	<2
2020	7.7	15	<15	<0.005	<0.01	<0.01	0.013	0.031	<0.01	<0.0001	<0.01	<0.0001	<0.01	0.011	98	40	<2
Limit values	5.5-9.5	20	160	1	0.5	0.02	2	2	2	0.005	2	0.2	0.1	0.5	1000	1200	5
Unit of measurement		mg/l	mg/l O2	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l

Table 14

Furthermore, the plant, not being served by the municipal sewage network, has equipped itself with a network to collect all the run-off rainwater, whether from the roofs, yards or roads; this water, transported in special treatment and settling tanks, is then either reused in the steelworks processes, or, if it cannot be reused, discharged into surface water bodies according to current authorisation. There are 7 discharge points for run-off rainwater from the roofs (discharges S7, S8, S9, S11, S13 and S14).

The monitoring of rainwater discharges also shows that the desired elements, as required by the IEA prescriptive framework, are constantly and widely below the limits provided for by current legislation; this means that the dedicated system can be considered very efficient.

6.6 Emissions released into the atmosphere

The monitoring values also confirm for 2021 that the San Zeno plant guarantees low values of emissions into the atmosphere.

The values are measured at six emission points located at the plant, the two main ones are those dedicated to the EAF and LF/LF-Twin furnaces (E1.1 and E1.2), on which a continuous monitoring system (EMS) for dust has been installed and running since 2016.

The other emission points, of little interest given the volumes involved, are: two for continuous casting (E7.1 and E7.2), one for the VD degassing plant (E8) and one for the "off-line" oxycutting plant (E9), which are subjected to an internal procedure measurement campaign.

In this document, we will therefore analyse only the main emissions, E1.1 and E1.2, for the extraction and treatment

of melting and refining operations.

The results of both the measurement campaigns and the continuous dust monitoring for points E1.1 and E1.2 confirm concentration values of the main pollutants in air emissions in line with the previous two-year period, well below the limits provided for by the applicable legislation for each pollutant.

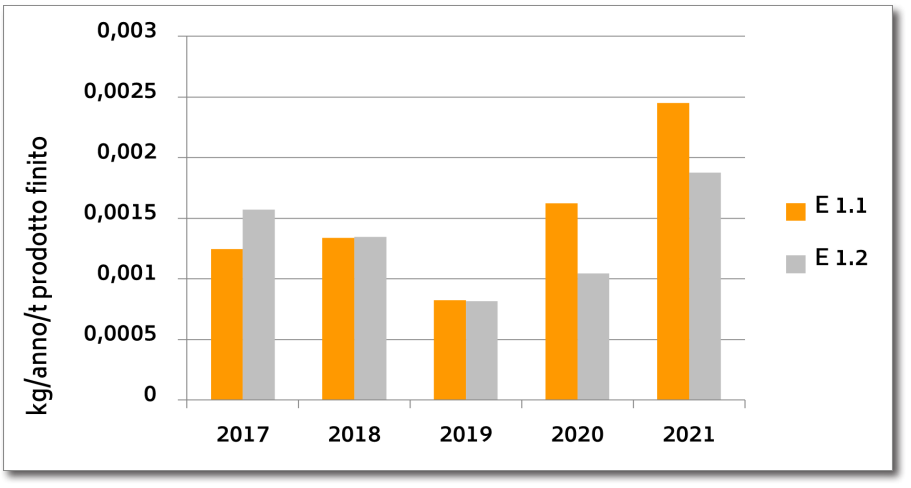
Concentration of dust and other pollutants in the EAF and LF area

Pollutants	Release point	2017	2018	2019	2020	2021 I semestre	Limit values
Polveri Totali Sospese (PTS) mg/Nm³	E 1.1	0.3	0.3	0.2	0.4	0.6	5
	E 1.2	0.3	0.3	0.2	0.3	0.6	
Ossidi di Azoto (NOx) mg/Nm³	E 1.1	13.8	5	4.1	5.9	17.3	300
	E 1.2	5.6	6.1	7.9	4.3	8	
Diossine e Furani (PCDD + PCDF) ng/ Nm³	E 1.1	0.0009	0.0015	0.0013	0.0024	0.0022	0.1
	E 1.2	0.0013	0.0023	0.0185	0.0015	0.0055	

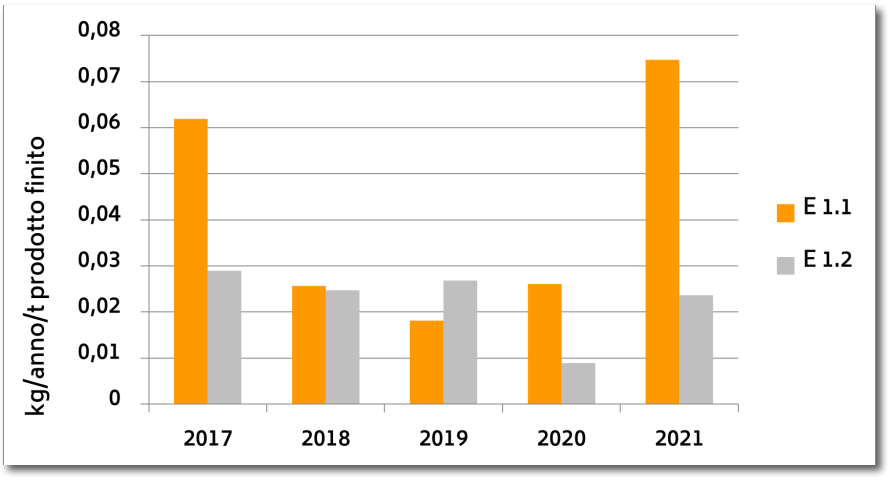
Tabella 15

The following graphs show the total annual quantities of pollutants (PTS, NOx) expressed in kg/year and compared with production data. The values were determined by multiplying the mass flow value by the operating hours and compared with the annual production.

It is worth noting the data on the concentration of dioxins (PCDD + PCDF) detected at the chimneys; as can be seen from the table, with reference to the period considered, the best technologies adopted for some time by the plant help reduce the pollutant in a systematic and timely manner, achieving results that prove the value is about 100 times below the limit set by current legislation.



Graph 11 - PTS



Graph 12 - NOx

6.6.1 Emission Trading System (ETS)

Currently, the CO2 quotas assigned to the Travi e Profilati Pallanzeno S.p.A. steelworks, the San Zeno Naviglio plant, for the period 2013-2021, based on Deliberations 29/2013 and 42/2021 are indicated in the following table.

assigned ETS	2017	2018	2019	2020	2021 1st six months
ETS	43,520	42,671	41,812	40,950	47,393

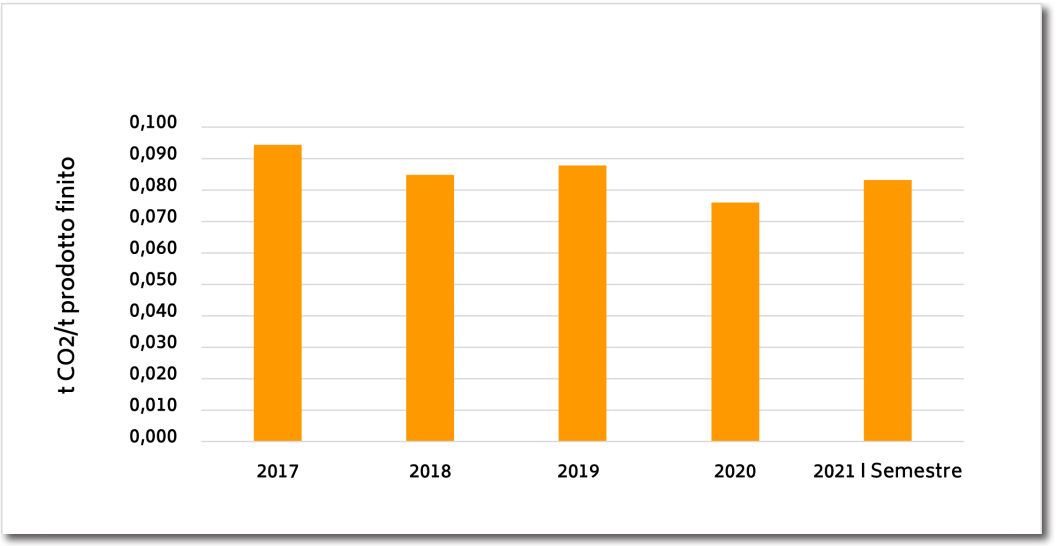
Table 16

Data is shown below on the tonnes of total CO2 emissions at the plant over the last five years, expressed in tonnes.

	2017	2018	2019	2020	2021 1st six months
Direct CO2 emissions (tonnes)	73,709	67,631	60,149	45,132	36,527
Specific direct CO2 emissions	0.094	0.085	0.088	0.076	0.083

Table 17

Since 2018 there has been an improvement in terms of specific direct emissions. This is mainly due to the lower use of coal during melting in favour of other raw materials such as cast iron.



Graph 13 - Specific direct CO2 emissions

As can be seen from the data and the dedicated graph, in 2018, there was a clear improvement in terms of specific direct CO2 emissions; this is also thanks to the virtuous choice from an environmental point of view, to load, where obviously possible, raw materials with a higher carbon content (e.g. iron and direct reduced iron) compared with iron scrap, allowing a subsequent lower use of coal and/ or anthracite, and therefore a lower impact in CO2 emissions.

However, as also highlighted in the dedicated paragraph, TPP is constantly committed to monitoring the consumption of methane and coal, which directly affect CO2emissions, but also to monitoring and reducing electricity consumption, as indirect sources of emissions.

6.7 Diffuse emissions

Through its systematic and specific commitment, TPP has over time adopted a series of technical and organisational measures aimed at systematically and significantly reducing diffuse emissions that are generated during all production phases.

Therefore, in order to ensure minimum levels of dust suspension, the system

to support and monitor production processes (extractor hoods, filters, types of filter materials, activated carbon, etc) is continuously and constantly monitored, maintained and, where required, updated.

Great attention is also paid to continuously and constantly reducing diffuse emissions that can be generated in the slag area during all management phases, which can range from spillage to internal handling up to loading for sending to destination plants; TPP adopted technical measures long ago to oversee operations, such as a constant reduction in suspended dusts through water spraying systems, or organisational measures, also continuously raising awareness among all employees for slag handling operations.

Any diffuse emissions of dust deriving from the transit of road vehicles inside the plant are also monitored; in fact, a speed limit of 10 km/h is set in all the transit areas inside the plant but, above all, for some time now the plant has brought in a sweeper that, by passing continuously over the internal roads of the plant, constantly removes dust residues helping to maintain a minimum level of suspension of the dust that can be generated from moving vehicles.

Moreover, some time ago, the company launched a series of investments aimed at automating waste systems, and the subsequent delivery to the plants of auxiliary raw materials (e.g. lime, coal, ferroalloys, etc).

This has made it possible to significantly reduce diffuse emissions; in fact, unlike in the past, today almost all auxiliary raw materials are stored in silos and/or hoppers and added to furnaces (EAF or LF) either through direct pneumatic systems (for example, for coal and lime) or fully insulated and aspirated conveyor belts. The factory has 21 plants containing greenhouse F-Gases, for a total of 149 tonnes of CO_2 equivalent.

In the last three years, there have been no losses; the company guarantees periodic maintenance according to the provisions of current legislation.

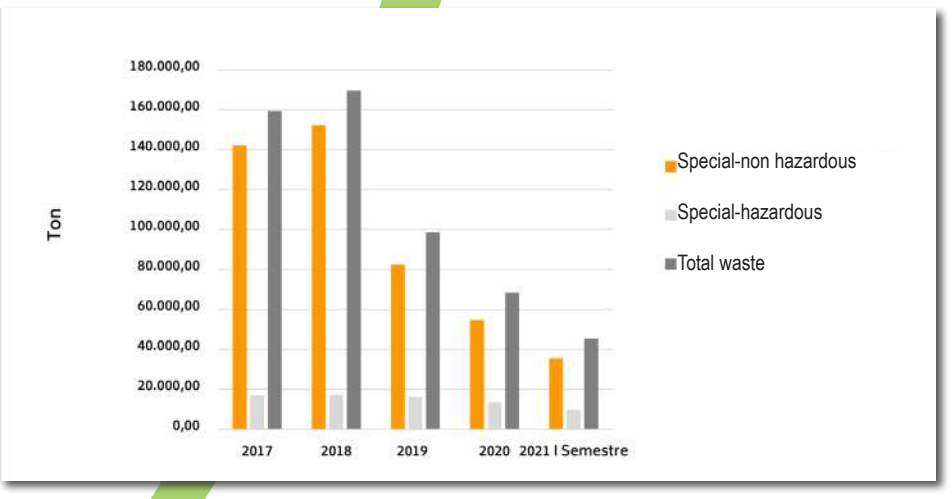
6.8 Waste

The following table summarises the quantities and disposal of waste for the period 2017 to the first half of 2021, expressed in tonnes. In the two-year period 2017-2018, the value of black slag disposed of as waste is so high because the slag was not sold as Blackstone; from 2019, Blackstone production resumed and consequently the disposal of black slag decreased. The reduction in the production of black slag is reflected in the production of non-hazardous waste.

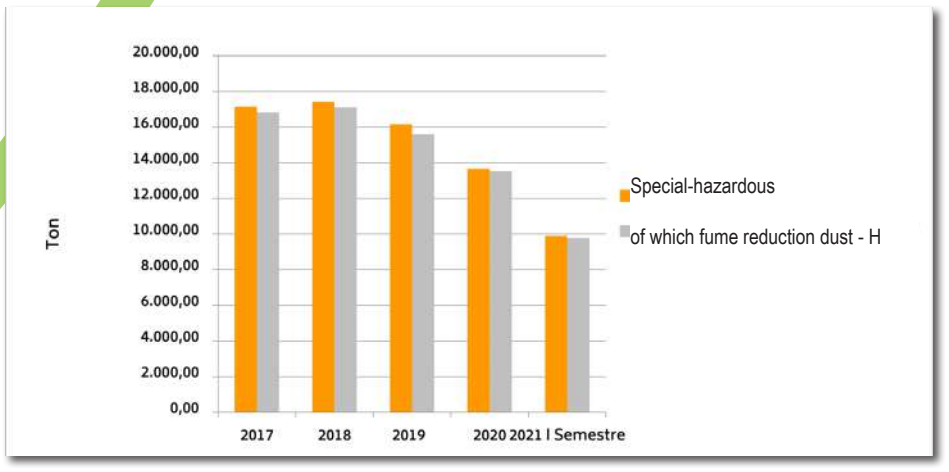
Waste classification	2017	2018	2019	2020	2021 1st six months
Special - non-hazardous (tonnes)	142,240.49	152,287.14	82,577.33	54,780.75	35,498.34
of which Black Slag (CER 10.02.01) - NH (tonnes)	81,979.37	84,687.40	29,451.24 (*)	5,578.01	0.00
of which White Slag (CER 10.02.02) - NH (tonnes)	55,218.26	59,597.70	47,694.90	45,272.60	33,158.28
Special - hazardous (tonnes)	17,139.24	17,432.03	16,159.72	13,652.90	9,879.30
of which Fume Reduction Dust - H (tonnes)	16,815.30	17,113.49	15,596.39	13,528.05	9,780.59
Total Waste (tonnes)	159,379.72	169,719.17	98,737.05	68,433.65	45,377.64
Hazardous waste/total waste (%)	10.75%	10.27%	16.37%	19.95%	21.77%

(*) Blackstone production has resumed since week 13

Table 18

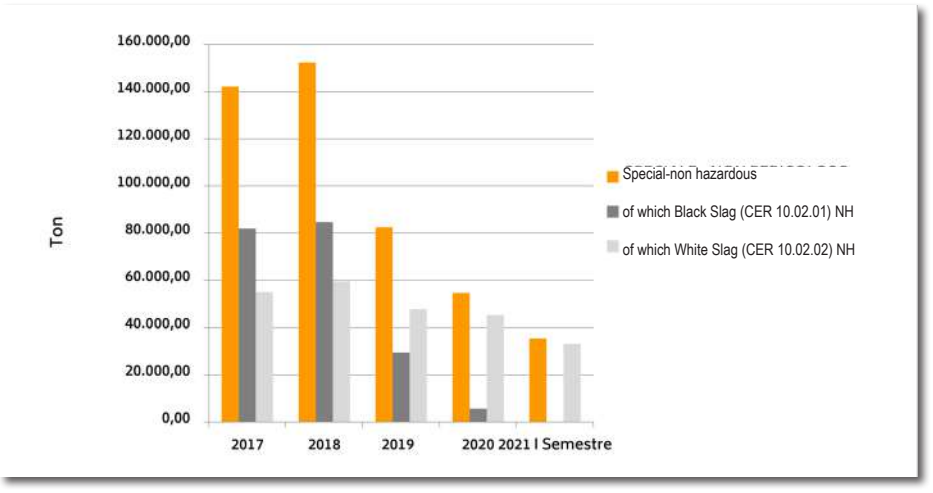


Graph 14: Total waste



Graph 15 - Hazardous waste

The following graph shows the quantities of waste sent for recovery and disposal:

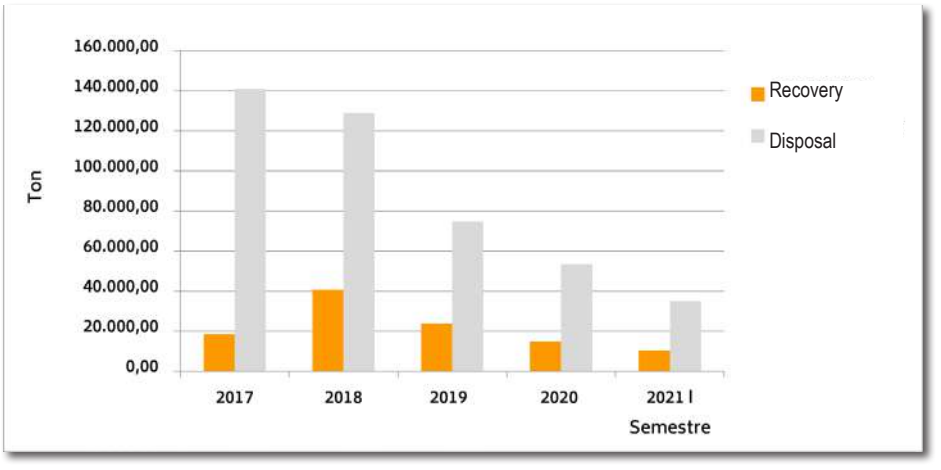


Graph 16 - Non-hazardous waste

	2017	2018	2019	2020	2021 1st six months
Recovery (tonnes)	18,353.72	40,755.36	23,933.57	14,930.35	10,373.35
Disposal (tonnes)	141,026.00	128,963.81	74,803.48	53,503.30	35,004.29
Total waste (tonnes)	**159,379.72**	**169,719.17**	**98,737.05**	**68,433.65**	**45,377.64**
Waste for recovery/total waste (%)	**11.52%**	**24.01%**	**24.24%**	**21.82%**	**22.86%**

Table 19

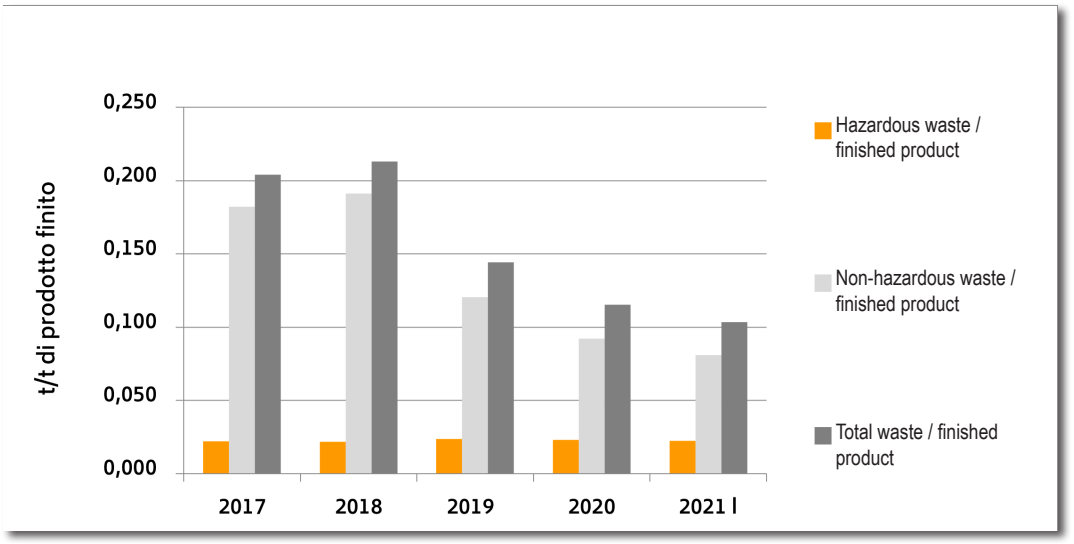
Also on the subject of waste, TPP has implemented a series of actions aimed at improving its management and, where possible from a regulatory and technological point of view, aimed at internal recovery; furthermore, a series of initiatives have been adopted dedicated to improving waste separation, both in offices and in departments, with the aim of lowering the production index for mixed packaging in favour of separate packaging (paper, plastic and wood).



Graph 17 - recovery vs disposal

Ratio	2017	2018	2019	2020	2021 1st six months
Non-hazardous waste/Finished product (tonnes)	0.182	0.191	0.121	0.092	0.081
Hazardous waste/Finished product (tonnes)	0.022	0.022	0.024	0.023	0.023
Total Waste/Finished Product (tonnes)	**0.204**	**0.213**	**0.144**	**0.115**	**0.103**

Table 20



Graph 18 - Specific waste production

6.9 Biodiversity

Currently, the Travi e Profilati di Pallanzeno area of the San Zeno Naviglio site, covers approximately 241.085 m2:

- 70.100 m2 covered
- 61.046 m2 waterproofed
- 109.939 m2 oriented to nature

This distribution of the areas on which the site is located has remained unchanged over the last three years.

7. Circular economy

7.1 Blackstone - a new life for black slag

The production of steel with an arc furnace uses iron scrap as a raw material: the electricity provided by the electrodes and the chemical energy produced by the insufflation of coal, oxygen and methane melts the loaded scrap and auxiliary additives, leading to the formation, alongside steel, of steelworks slag, also commonly called **"black slag".**

In order to use the waste generated (black slag) and to ethically respect the circular economy, Travi e Profilati di Pallanzeno has long undertaken a technical and authorisation process for the production of slag as a by-product, which it has given the trade name Blackstone.

From a technical point of view, Blackstone is an "aggregate", i.e. a granular material that can be used in construction, more specifically it is an "*artificial aggregate*", i.e. "*an aggregate of mineral origin deriving from an industrial process that involves a thermal change*".

By-product certification process

In view of the above, TPP:

- has registered the material - by joining the Euroslag Consortium - pursuant to the Reach Regulation. Blackstone was therefore included among the substances and mixtures produced in the EU: the registration dossier, updated on 15/01/2019 bears the number FM535815-28 and the registration reference number is 01-2119485979-09-0054 of 29/11/2010.

- has obtained certification and authorisation for CE marking of the aggregate according to Standards UNI EN 12620:2008, UNI EN 13043:2004 and UNI EN 13242:2008

The production control system has been verified and approved by accredited

third parties.

The CE marking allows the achievement of level 2+, the conformity index for materials intended for structural uses.

Blackstone can be classified as a "by-product" pursuant to Italian Legislative Decree 152/2006, Article 184-bis, paragraph 1; when it meets all the conditions provided for by the Article itself.

The lack of market demand for Blackstone, and therefore the failure to fulfil condition b) of Italian Legislative Decree 152/2006, Article 184-bis, forced TPP to stop the production of Blackstone, despite the black slag retaining the same qualitative and performance characteristics for the production of the by-product, and to start landfilling and/or recovery at dedicated plants managed by third parties.

The approval of the investment for the construction of a new rolling mill at the San Zeno Naviglio site opened up the opportunity for a direct internal reuse of Blackstone; therefore starting from the second part of the first quarter of 2019, production started again, which will probably continue for at least the next two years given the major works to be carried out and in which the material can be used.

	2016	2017	2018	2019	2020	2021 1st six months
Production of Blackstone in tonnes	8707.7	n,h,	n,h,	34,172.20	67,034.01	52,227.72

Tabella 21

7.2 Recovery and reuse of residues and by-products

There are certain typical residues of the iron and steel industry, such as the ferrous material resulting from the deferrisation of slag, or the tundish dregs or ferrous leachates that can be recovered directly in the main iron and steel work.

The company carefully recovers residues and production waste according to the management methods as by-products pursuant to Article 184-Bis of Italian Legislative Decree 152/06e and, thanks to the application of the principle of the Circular Economy, recovers and reuses on site the materials from the aforementioned operations.

Moreover, projects are being studied for the recovery in the furnace of products deriving from the reuse of plastic materials at the end of their life, replacing coal; the study phases, if compatible with existing technology and current legislation, will be followed by any field tests.

8. Emergency management

This chapter shows the reasonably foreseeable emergency scenarios for which the company has provided prevention, protection and management measures by developing an Internal Emergency Plan.

For these scenarios, the company has prepared a three-year emergency simulation plan in order to verify that the intervention methods are adequate and compliant with the provisions of the specific internal procedures.

Moreover, fire-fighting managers and staff have been appointed, adequately trained according to the provisions of the applicable legislation and their

names have been communicated to all workers.

8.1 Fire and explosions

Based on the results of the fire risk assessment, prevention and protection systems have been put in place to eliminate or reduce the risk.

The plant is equipped with fixed and moveable extinguishing systems and facilities capable of containing the spread of fire.

All fire-fighting systems undergo regular maintenance by specialist third-party companies.

In August 2018, the company obtained the Fire Prevention Certificate (CPI).
TPP has developed specific operation sheets for handling emergencies (fires, explosions, or pressure and heat waves) resulting from:

- Rupture of the methane or oxygen pipeline;
- Fire in the sleeves of the smoke reduction system;
- Fire from spillage of slag or molten steel;

With regard to the provisions of Article 26-bis of Italian Legislative Decree No 113 of 4 October 2018, introduced by Italian Law No 132 of 1 December 2018 (communication of the Internal Emergency Plan to the competent Prefect), the company, as indicated by the Circular from the Italian Ministry of the Environment No 3058 of 12/02/2019, falling within the scope of Italian Legislative Decree 105/2015, does not also have to follow the provisions of Article 26-bis, since they are redundant with respect to what is already provided for by the specific sector regulations.

8.2 Soil contamination

TPP has prepared suitable procedures and operating practices to regulate the activities envisaged for the protection of soil and subsoil and for the prevention of any

accidental pollution. There are no underground tanks at the company; all above-ground tanks that contain hazardous substances are equipped with containment basins sized for maximum capacity, in order to prevent any accidental breakage of the tank from leading to soil pollution.

Furthermore, in order to verify the nature and chemical status of the subsoil, the company carried out continuous core surveys approximately 2m from ground level until it reached the groundwater, monitoring pollutants such as Metals, Hydrocarbons, PCB, Fluorides, and IPA; all the analysis showed that the values found are far below the legal limits.

TPP regularly carries out visual inspections of all impermeable floors of buildings and loading and unloading areas, in order to verify their correct condition and the absence of cracks that could cause soil contamination.

All loading and unloading operations and the handling of hazardous substances are carried out with the utmost care to prevent any soil contamination.

To contain any spills, there are first aid and collection kits near the warehouses.

The regular cleaning of the drainage grids positioned on the internal and external floors is also guaranteed, in order to ensure the proper flow of rainwater to the various treatment tanks.

The internal emergency plan provides specific operational procedures regarding the protection of soil and subsoil and the prevention of its pollution caused by accidental spills of liquid and solid substances (for example, the spillage of large amounts of smoke reduction powders).

During the first half of 2020, there was an environmental emergency:

- On 18/06/2020, during the internal

transfer of a lifting platform, an oil leak was noticed due to a break in the pneumatic system. The appropriate emergency procedures were immediately activated; the staff in charge promptly intervened by spreading suitable absorbent material on the leak, limiting and containing the emergency. Subsequently, the material was removed and collected in a suitable container in order to be sent for proper disposal.

8.3 Radioactivity

With a view to analysing and preventing any scenarios with a significant environmental, health and safety impact, TPP investigated and analysed the possible contamination caused by entry into the plant of radioactive material accidentally sent to the melting process.

Following this analysis, TPP adopted a series of devices, measures and company operating procedures that have been included within the radioactivity risk control and monitoring plan drawn up in close collaboration with the Qualified Expert.

The entry of raw materials, ferrous scrap and additives, and the exit of waste (e.g. smoke reduction powders) are verified through fixed instruments (radiometric portals) installed at the driveway and railway entrances.

The alarm thresholds of these systems are set at very low levels in order to ensure maximum control. The management of any alarms is regulated by internal procedures involving, at different levels, security staff, the environmental office and Plant Management.

In order to further monitor the possible presence of radioactive contamination during the process phases, a continuous detection system capable of picking up on even the smallest anomalies was installed on the smoke reduction system.

For greater safety, the first steel samples collected at the melting furnace are also checked for the possible presence of radioactive contamination.

All control instruments (portals, continuous monitoring systems, portable instruments, etc) are subjected to periodic checks of correct operation by a qualified external company.

There are also thirteen Co60 sources inside the plant, serving the two continuous casting machines, for checking the level of liquid metal in ingots.

These sources, held in accordance with Prefect Clearance, are kept in special shielded containers that prevent emission.

These sources are managed according to dedicated operating practices, drawn up by the Qualified Expert, which provide for the monthly control of the devices, film dosimeters, which are carried by all the staff operating in the area, and that environmental monitoring is carried out every six months at the plant.

During 2020, no findings of radioactive material were detected in the scrap purchased.

8.4 Major accident risks

Based on the industrial activity carried out, in order to analyse and prevent possible scenarios with major repercussions in terms of environmental, health and safety impacts, TPP has undertaken a process of verification and analysis relating to Major Accident Risks in accordance with the provisions of Italian Legislative Decree Italian Legislative Decree 105 of 2015.

All the materials and critical substances, each in the maximum quantities potentially present at the plant, were considered and an overall assessment was made which led, in particular, to consider as hazardous,

if dispersed in water, the substances, zinc and lead, contained in the smoke reduction powders. These powders can be present in maximum quantities such as to classify the company in the "lower threshold" according to Article 13 of Italian Legislative Decree 105/2015.

In 2017, the company made the proper notification to the competent authorities and developed its Company Management System integrating the requirements of the new legislation by adopting appropriate procedures and operating practices required to prevent any dispersion and to manage any emergencies related to these risks.

During 2018, the company underwent a series of checks by the Inspection Group made up of staff from Arpa Lombardia, the Region of Lombardy and the Italian Fire Brigade who attested to the compliance of the Management System adopted and implemented.

In 2020, the company updated its notification to the competent authorities following analytical investigations on smoke reduction powders that, while maintaining their hazard characteristics, helped establish a lower hazard level for them.

8.5 Emissions into the atmosphere

In order to keep under control the efficiency and effectiveness of the filtration and reduction systems to monitor the emissions generated by the melting and refining processes, continuous meters of the dust concentration and the suction flow rate are installed on chimneys E1.1 and E1.2; these instruments, by measuring every 5 seconds, allow a continuous control of the efficiency of the filtration systems and are able to promptly report any deviations in the values to staff.

Furthermore, specific procedures have been prepared for handling any anomalies, procedures that provide a series of checks aimed at removing

the anomalies themselves and, in particularly critical situations, stop the melting process in the EAF furnace until the problem is fully resolved.

All operations for handling the continuous monitoring system for emissions into the atmosphere (EMS) are contained in a Manual, drawn up in accordance with the provisions of current sector regulations and approved by the ARPA.

During the first half of 2021, an event occurred that exceeded the dust concentration limit set for the hourly average, detected by the continuous control systems; in fact, on 04/02/2021, the probes installed on the E1.1 chimney recorded a dust concentration value of 6.26 mg/Nmc, which subsequently exceeded the limit of 6.25 mg/Nmc.

The emergency procedures were immediately applied until the system was shut down; the checks carried out subsequently on the filter system upstream of the emission (on all the sleeves inside all the compartments of the filtration system) showed that a sleeve in a filtration compartment was slightly detached at the entrance, and was immediately fixed.

The restart and subsequent running at full speed did not show any anomalies. The concentrations recorded after restarting were in line with the normal performance of the system.


LF Termocamera
Box 1
Box 2
Box 3
FOV 25 13/02/2019 12:23
RSHMI04
HMI-LF - Ferroleghe - Ferroleghe
San Zeno Acciai

9. Improvement plan 2019/2022

Update on 30/06/2021

The table below shows the updates in red for the work carried out and the goals achieved.

Environmental objective	Specific objective	Indicator	Goal	
Reduction of energy consumption	Reduction of electricity consumption (LIGHTING)	kWh/year	-10% tarting data 2018: 557000 kWh/year	
Reduction of energy consumption	Reduction of electricity consumption (FURNACE)	kWh/ton	-5% starting data 2018: 443 kWh/ton	
Reduction of water consumption	Reduction of water consumption for the replacement of water-cooled compressors/dryers/air conditioners	mc/ton	-5% starting data 2018: 0,4212 mc/ton	
Reduction of emissions into the atmosphere	Reduced atmospheric emissions from company cars	~~n.2 electric Porter~~ n 1 car	100%	

Table 22 -Continues on pag 80/81

	Actions	Responsible Company Department	Deadline	Implemention check Gradual progress on 30/06/2021
	Lighting fixtures census	Energy Manager	30/09/2018	Completed
	Economic assessment for the replacement with LED fixtures	Energy Manager	30/09/2018	Completed
	Assessment of the feasibility of implementation	Responsabile Manutenzione	31/08/2019	Completed
	Gradual replacement of lighting fixtures with LED technology fixtures	Energy Manager	~~30/09/2021~~ 30/09/2022	Ongoing Partial data: 554000 kWh on 31/12/2020. Reduction 0.5% 167 lighting fixtures replaced out of 334. Rescheduling due to work on the new rolling mill. Partial data: 267090 kWh on 30/06/2021
	LED fixture consumption monitoring	Energy Manager	30/09/2021	Ongoing
	Improvement and efficiency of the chemical/electrical package	Furnace Manager	31/12/2021	Completated Chemical balancing of combustion elements: 412 kWh/tonne on 30/06/2021, consumption reduction ~ 7%
	Replacing water-cooled compressors with air-cooled compressors	Maintenance Manager	31/12/2018	Completated
	Replacing water-cooled dryers with air-cooled dryers	Maintenance Manager	~~31/12/2020~~ 31/12/2021	Ongoing 1 dryer replaced. Rescheduling the deadline due to Covid-19. Partial data 30/06/2020: 0.36 m3/ton 1 dryer still to be replaced.
	Replacement of water air conditioners with gas ones	Maintenance Manager	31/12/2021	1 air conditioner replaced. Partial data 30/06/2020: 0.36 m3/tonne 2 air conditioners still to be replaced.
	~~Purchase of an electric porter to replace diesel ones~~	Energy Manager	31/12/2021	Ongoing From the cost-benefit analysis, it is better from an environmental point of view to replace the diesel pump instead of the porters. 1 electric car purchased. One electric van ordered
	Purchase of electric/hybrid cars to replace diesel ones			

Environmental objective	Specific objective	Indicator	Goal	
Reduction of emissions into the atmosphere	NOx Reduction	kg/year/tonne	-5% starting data 2018: 0.0503 kg/year/ tonne	
Involvement and participation of staff	Report collection system	no. of reports/year	10	
Improvement of environmental performance	Certification of the energy management system	ISO 50001 certificate	Obtaining certification	
Improvement of waste management	Increased recycling	recycled tonne/ unrecycled tonne	10% starting data 2018: 182140 kg of unrecycled waste	
Stakeholder involvement	More information to stakeholders	no. of views	500/year	
Reduction of noise emissions	Reduction of noise emissions towards the west side of the plant	dB	-1 dB (*)	
Reduced use of pollutants	Reduced use of oils with an environmental impact	no. of oils	100%	
Improvement of waste management	White slag recovery for internal reuse	tonne of white slag recovered/tonne of white slag produced	20% starting data 2019: 47694 tonnes of white slag 0% white slag recovered	

(*) starting data: sensor 2, day value 56.5 dB-night value 49 dB; sensor 3, day value 51 dB-night value 49.5 dB

Table 22

	Actions	Responsible Company Department	Deadline	Implemention check Gradual progress on 30/06/2021
	Purchase of materials with low nitrogen content and improvement of electric arc management	Furnace Manager	31/12/2021	Completated Purchase of materials with low nitrogen content and commissioning of a new furnace electrode regulator. Data on 31/12/2020: 0.034 kg/year/tonne NOx reduction ~ 33%
	Creation of an improvement report collection system	Environmental Manager	31/12/2021	At the staff office there is a box for collecting safety/environmental reports
	Certification audit by a certified third party	Management Standards	30/09/2022	To be started
	Add new containers for recycling different types of packaging	Environmental Manager	31/12/2020	Ongoing Adding plastic packaging and glass packaging containers (started on 01/01/2020). Partial data 30/06/2020: 1.37% Partial data 30/06/2021: 4.94%
	Creation of a presentation video for the contents of the Environmental Statement	Environmental Manager	31/12/2021	Completed - Video made and being broadcast on the LinkedIn channel
	Implementation of a sound-absorbing barrier project along the entire western perimeter of the site	Environmental Manager	30/09/2022	To be started
	Survey of oils at the company	Environmental Manager	30/06/2020	Closed Survey done of oils at the company
	Technical/economic study of oil replacement	Environmental Manager	~~31/12/2020~~ 31/12/2022	Ongoing. Request alternative synthetic lubricant products to those in use from the supplier
	Replacing oils with synthetic mineral oils	Environmental Manager	~~31/12/2021~~ 31/12/2022	To be started
	Technical/economic study of white slag recovery	Environmental Manager	31/12/2021	Ongoing
	Implementation of the project	Environmental Manager	31/12/2022	To be started
	Monitoring of environmental and process parameters related to the project	Environmental Manager	31/12/2022	To be started

10. Applicable legislation

The company complies with all legislative requirements applicable to its business.

The framework is below for the main EU, national and regional regulations applicable to the TPP site in San Zeno Naviglio.

Autorizzazione Integrata Ambientale:

AD 3035/2018 del 07/09/2018 della Provincia di Brescia

Emissioni in atmosfera

D.Lgs. 152/2006 e s.m.i. parte V – Norme in materia di tutela dell'aria e di riduzione delle emissioni in atmosfera.

Sistemi di monitoraggio delle emissioni:

- Direttiva 2010/75/UE del Parlamento europeo e del Consiglio, del 24 novembre 2010, relativa alle emissioni industriali (prevenzione e riduzione integrate dell'inquinamento)

Testo rilevante ai fini del SEE

- Decisione di esecuzione 2012/135/UE della Commissione del 28 febbraio 2012 che stabilisce le conclusioni sulle migliori tecniche disponibili (BAT) per la produzione di ferro e acciaio ai sensi della direttiva 2010/75/UE del Parlamento europeo e del Consiglio relativa alle emissioni industriali
- D.g.r. 23-5-2014 n.X/1872 indirizzi per l'applicazione delle conclusioni sulle migliori tecniche disponibili (MTD-BAT) per la produzione di acciaio con forni elettrici ad arco e la colata, adottate ai sensi della direttiva 2010/74/UE, nell`ambito dei procedimenti di riesame delle autorizzazioni integrate ambientali (AIA)
- D.d.u.o. 27-12-2011 n. 12834 "Ulteriori disposizioni in materia di sistemi di monitoraggio in continuo alle emissioni (SME) - Integrazione del d.d.s. n. 4343 del 27 aprile 2010 "Misure tecniche per l'installazione e la gestione dei sistemi di monitoraggio in continuo alle emissioni (SME)"; modifica e aggiornamento del d.d.g. n. 3536 del 29 agosto 97:"Criteri e procedure

per la gestione dei sistemi di monitoraggio delle emissioni (SME) per impianti termoelettrici"; modifica e aggiornamento del d.d.u.o. n. 1024 del 30 gennaio 2004: "Criteri e procedure per la gestione degli SME per impianti di incenerimento rifiuti"

- D.g.r. 30-12-2003 n. 7/15957 Definizione di prescrizioni tecniche per il contenimento delle emissioni in atmosfera del comparto acciaio
- D.g.r. 10-12-2004 n. 7/19797 "Approvazione del Manuale delle Best Pratices per la gestione degli impianti per la produzione di acciaio"
- D.d.s. 27-4-2010 n. 4343 "Misure tecniche per l'installazione e gestione dei sistemi di monitoraggio in continuo alle emissioni (SME)"

Gas effetto serra:

DIRETTIVA 2003/87/CE DEL PARLAMENTO EUROPEO E DEL CONSIGLIO del 13 ottobre 2003 che istituisce un sistema per lo scambio di quote di emissioni dei gas a effetto serra nella Comunità e che modifica la direttiva 96/61/CE del Consiglio.

- Regolamento Commissione UE 176/2014/Ue – modifica al Reg. (UE) 1031/2010 – Vendita all'asta delle quote di emissioni dei gas effetto serra
- D.L.gs. n. 30 del 13 marzo 2013 - Attuazione della direttiva 2009/29/CE che modifica la direttiva 2003/87/CE
- DECISIONE (UE) 2015/1814 DEL PARLAMENTO EUROPEO E DEL CONSIGLIO del 6 ottobre 2015 relativa all'istituzione e al funzionamento di una riserva stabilizzatrice del mercato nel sistema dell'Unione per lo scambio di quote di emissione dei gas a effetto serra e recante modifica della direttiva 2003/87/CE
- DECRETO DEL PRESIDENTE DELLA REPUBBLICA 16 novembre 2018, n. 146 - Regolamento di esecuzione del regolamento (UE) n. 517/2014 sui gas fluorurati a effetto serra e che abroga il regolamento (CE) n. 842/2006. (19G00001) (GU Serie Generale n.7 del 09-01-2019) Regolamento di esecuzione del regolamento (UE) n. 517/2014 sui gas fluorurati a effetto

serra e che abroga il regolamento (CE) n. 842/2006. (19G00001) (GU Serie Generale n.7 del 09-01-2019)

Gas fluorurati:

- Regolamento (UE) N. 517/2014 del Parlamento Europeo e del Consiglio del 16/04/2014 sui gas fluorurati a effetto serra
- Regolamento di esecuzione (UE) 2015/2068 della Commissione, del 17 novembre 2015, stabilisce, a norma del regolamento (UE) n. 517/2014 del Parlamento europeo e del Consiglio, il formato delle etichette per i prodotti e le apparecchiature che contengono gas fluorurati a effetto serra.
- Regolamento di esecuzione (UE) 2015/2066 della Commissione, del 17 novembre 2015, stabilisce, a norma del regolamento (UE) n. 517/2014 del Parlamento europeo e del Consiglio, i requisiti minimi e le condizioni per il riconoscimento reciproco della certificazione delle persone fisiche addette all'installazione, assistenza, manutenzione, riparazione o disattivazione di commutatori elettrici contenenti gas fluorurati ad effetto serra o al recupero di gas fluorurati ad effetto serra da commutatori elettrici fissi.
- Regolamento di esecuzione (UE) 2015/2067 della Commissione, del 17 novembre 2015, che stabilisce, in conformità al regolamento (UE) n. 517/2014 del Parlamento europeo e del Consiglio, i requisiti minimi e le condizioni per il riconoscimento reciproco della certificazione delle persone fisiche per quanto concerne le apparecchiature fisse di refrigerazione e condizionamento d'aria, le pompe di calore fisse e le celle frigorifero di autocarri e rimorchi frigorifero contenenti gas fluorurati a effetto serra, nonché per la certificazione delle imprese per quanto concerne le apparecchiature fisse di refrigerazione e condizionamento d'aria e le pompe di calore fisse contenenti gas fluorurati ad effetto serra.

Sostanze ozono lesive:

- Regolamento (CE) n. 1005/2009 del Parlamento europeo e del Consiglio, del 16 settembre 2009, sulle sostanze che riducono lo strato di ozono
- DECRETO LEGISLATIVO 13 settembre 2013, n. 108 - Disciplina sanzionatoria per la violazione delle disposizioni derivanti dal Regolamento (CE) n. 1005/2009 sulle sostanze che riducono lo strato di ozono

Rifiuti

- D.Lgs. 152/2006 e s.m.i. - Norme in materia ambientale. Parte quarta - Norme in materia di gestione dei rifiuti e di bonifica dei siti inquinati.
- D.Lgs. 121/2020 - Norme in materia di discariche di rifiuti.
- Regolamento (UE) 2016/1179 della Commissione, del 19 luglio 2016, recante modifica, ai fini dell'adeguamento al progresso tecnico e scientifico, del regolamento (CE) n. 1272/2008 del Parlamento europeo e del Consiglio relativo alla classificazione, all'etichettatura e all'imballaggio delle sostanze e delle miscele
- Regolamento (UE) n. 1357/2014 della Commissione, del 18 dicembre 2014, che sostituisce l'allegato III della direttiva 2008/98/CE del Parlamento europeo e del Consiglio relativa ai rifiuti e che abroga alcune direttive.
- Regolamento (UE) 2017/997 del Consiglio, dell'8 giugno 2017, che modifica l'allegato III della direttiva 2008/98/CE del Parlamento europeo e del Consiglio per quanto riguarda la caratteristica di pericolo HP 14 «Ecotossico»
- Regolamento (UE) 2016/1179 della Commissione, del 19 luglio 2016, recante modifica, ai fini dell'adeguamento al progresso tecnico e scientifico, del regolamento (CE) n. 1272/2008 del Parlamento europeo e del Consiglio relativo alla classificazione, all'etichettatura e all'imballaggio delle sostanze e delle miscele

Rumore

- LEGGE 26 ottobre 1995, n. 447 - Legge quadro sull'inquinamento

acustico

- DPCM 14 novembre 1997 - Determinazione dei valori limite delle sorgenti sonore.
- DM 16 marzo 1998 - Tecniche di rilevamento e di misurazione dell'inquinamento acustico
- Legge Regionale n. 13/01 (Norme in materia di inquinamento acustico)
- DGR 8313/02 (valutazione di impatto e clima acustico)

Approvigionamento acque di pozzo

Autorizzazione all'emungimento dei pozzi

- Pozzo 2b (BS03273772014): Atto Dirigenziale n. 7581 del 29.10.2015 consumo potabile igienico
- Pozzo 3c (BS03308982017): Atto Dirigenziale n. 3125 del 23/10/2017 consumo industriale
- Pozzo 4d (BS03296032012): Atto Dirigenziale n. 6160 del 21/11/2016 consumo industriale

Provvedimento di concessione nr. 24486 del 05/12/2012 Richiesta di rinnovo del 01.08.2012 – Integrazioni del 04.11.2014:

- Pozzo 1a (BS01111931981) consumo umano - industriale
- Pozzo 5e (BS031231981) consumo umano

Scarichi idrici

- D.Lgs. 152/2006 e s.m.i. – Norme in materia ambientale. Parte III titolo 2.
- Regolamento Regionale n. 4 del 24 marzo 2006 - Disciplina dello smaltimento delle acque di prima pioggia e di lavaggio delle aree esterne, in attuazione dell'art. 52, comma 1, lettera a) della legge regionale 12 dicembre 2003, n. 26

Radiazioni ionizzanti

- D.Lgs. 101/2020 Attuazione della direttiva 2013/59/Euratom, che stabilisce norme fondamentali di sicurezza relative alla protezione contro i pericoli derivanti dall'esposizione alle **radiazioni ionizzanti**, e che abroga le direttive 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom e 2003/122/Euratom e riordino della

normativa di settore in attuazione dell'articolo 20, comma 1, lettera a), della legge 4 ottobre 2019, n. 117.

- D.Lgs. 23/2009 e s.m.i. - Attuazione della direttiva 2006/117/Euratom, relativa alla sorveglianza e al controllo delle spedizioni di rifiuti radioattivi e di combustibile nucleare esaurito
- D.Lgs. 100/2011 - Disposizioni integrative e correttive del decreto legislativo 20 febbraio 2009, n. 23, recante attuazione della direttiva 2006/117/Euratom, relativa alla sorveglianza e al controllo delle spedizioni di rifiuti radioattivi e di combustibile nucleare esaurito - sorveglianza radiometrica su materiali o prodotti semilavorati metallici

Sicurezza, sostanza pericolose ed antincendio

- D.Lgs. 81 del 09 aprile 2008 e s.m.i. - Attuazione dell'articolo 1 della legge 3 agosto 2007, n. 123, in materia di tutela della salute e della sicurezza nei luoghi di lavoro
- Regolamento n. 1907 2006(CE) e s.m.i. (ReACh) -. del Parlamento europeo e del Consiglio del 18 dicembre 2006 concernente la registrazione, la valutazione, l'autorizzazione e la restrizione delle sostanze chimiche (REACH), che istituisce un'agenzia europea per le sostanze chimiche, che modifica la direttiva 1999/45/CE e che abroga il regolamento (CEE) n. 793/93 del Consiglio e il regolamento (CE) n. 1488/94 della Commissione, nonché la direttiva 76/769/CEE del Consiglio e le direttive della Commissione 91/155/CEE, 93/67/CEE, 93/105/CE e 2000/21/CE
- Regolamento n. 1272/2008 (CE) e s.m.i. (CLP) del Parlamento europeo e del Consiglio, del 16 dicembre 2008, relativo alla classificazione, all'etichettatura e all'imballaggio delle sostanze e delle miscele che modifica e abroga le direttive 67/548/CEE e 1999/45/CE e che reca modifica al regolamento (CE) n. 1907/2006
- DPR 151 del 01/08/2011 - Regolamento recante semplificazione della

disciplina dei procedimenti relativi alla prevenzione degli incendi, a norma dell'articolo 49, comma 4-quater, del decreto-legge 31 maggio 2010, n. 78, convertito, con modificazioni, dalla legge 30 luglio 2010, n. 122

- DM 03 agosto 2015 - Approvazione di norme tecniche di prevenzione incendi, ai sensi dell'articolo 15 del D.Lgs. 139 del 08 marzo 2006

Emergenze

- Legge n. 132 del 1 dicembre 2018 - Conversione in legge, con modificazioni, del decreto-legge 4 ottobre 2018, n. 113, recante disposizioni urgenti in materia di protezione internazionale e immigrazione, sicurezza pubblica, nonché misure per la funzionalità del Ministero dell'interno e l'organizzazione e il funzionamento dell'Agenzia nazionale per l'amministrazione e la destinazione dei beni sequestrati e confiscati alla criminalità organizzata. Delega al Governo in materia di riordino dei ruoli e delle carriere del personale delle Forze di polizia e delle Forze armate. – presentazione al Prefetto del Piano di Emergenza Interno per gli impianti di trattamento rifiuti

RIR - Incidenti rilevanti

- D.Lgs. 105 del 26 giugno 2015 - Attuazione della direttiva 2012/18/UE relativa al controllo del pericolo di incidenti rilevanti connessi con sostanze pericolose.

11. Validation of the Environmental Statement

TPP Management shall forward the yearly necessary validated updates of its Environmental Statement to the competent body and make them publicly available.
The expiration date of this Statement is September 2022.

The accredited environmental verifier who has verified the conformity and validity of the data in this Environmental Statement with the requirements of Regulation (EC) No 1221/2009 and subsequent amendments is:

RINA SERVICE S.P.A.

Via Corsica,12

16128 - Genova GE

Accreditation no. IT-V-0002 del 16/04/1998

The content of this document shall be consistent with the content of the original Environmental Statement validated by the Environmental Verifier.

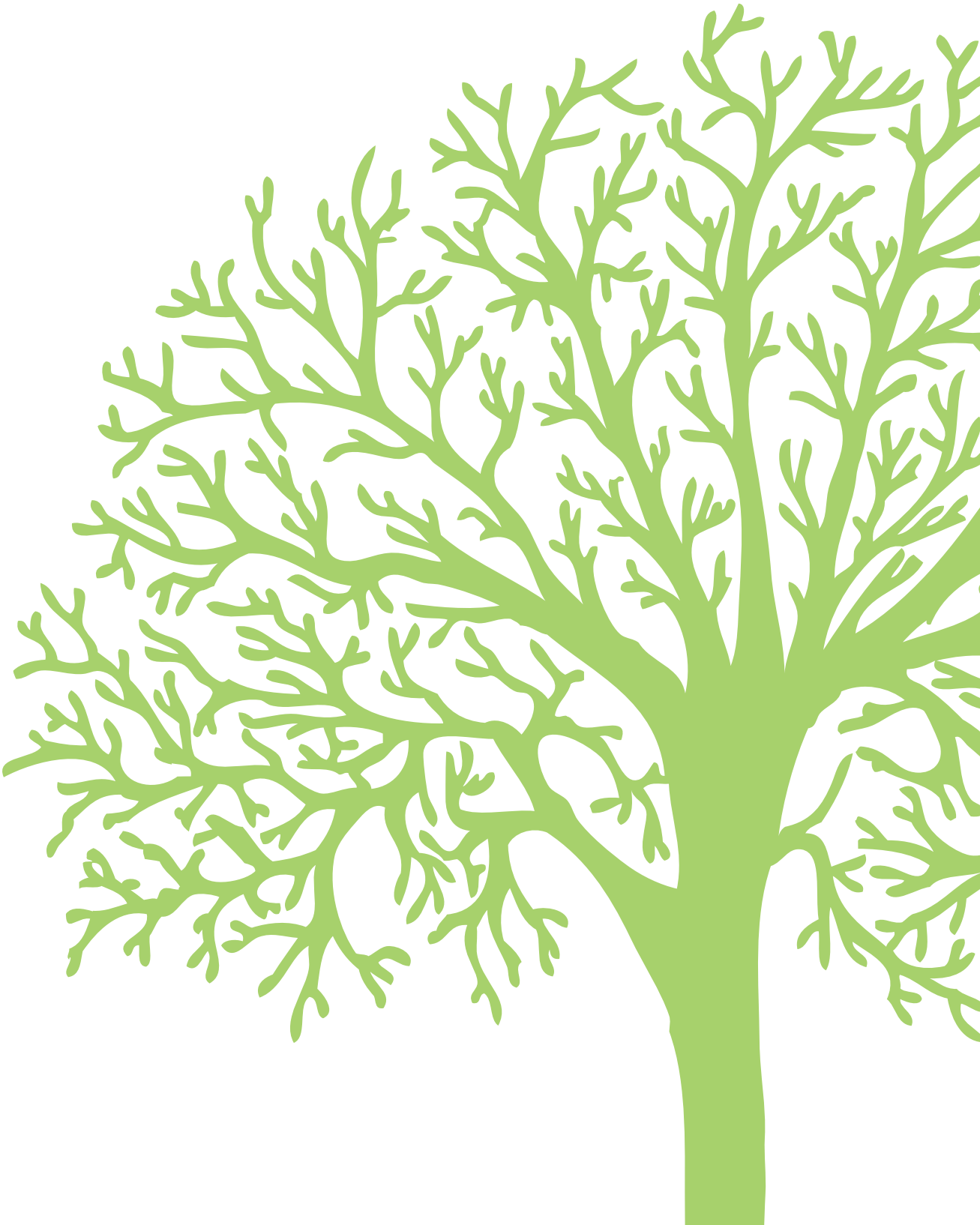
Note

Duferco Travi e Profilati

Sede Centrale del Gruppo
via Armando Diaz, 248
25010 San Zeno Naviglio
Brescia, Italy

© 2021 Duferco Travi e Profilati
All rights reserved

www.dufercotp.com



Duferco
TRAVI E PROFILATI