



ENVIRONMENTAL PRODUCT DECLARATION

MERCHANT BARS ITALIAN PLANTS AVERAGE

AFV ACCIAIERIE BELTRAME S.P.A.
AFV BELTRAME GROUP



Registration N°	Issue date	Valid until	Reference year	Based on
EPDITALY0018	2017-12-19	2026-03-02	2019	PCR ICMQ-001/15 v3 EN:15804:2012+A2:2019 ISO 14025
	Revision date			
	2021-03-02			
CPC Code	Declaration number	Plants involved		
41	AFVavgIT	Vicenza, San Didero, San Giovanni Valdarno		

GENERAL INFORMATION

EPD REFERENCES

EPD OWNER: AFV ACCIAIERIE BELTRAME SPA, VIALE DELLA SCIENZA 81, 36100, VICENZA – ITALY
 PIAZZA GIACOMO MATTEOTTI, 13, 52027 SAN GIOVANNI VALDARNO AREZZO – ITALY
 VIA PRAMOLLE, 1, 10050 SAN DIDERO TORINO – ITALY

PROGRAM OPERATOR: EPDITALY, VIA GAETANO DE CASTILLIA 10, 20124 MILANO - ITALY

INDEPENDENT VERIFICATION

This declaration has been developed referring to the EPDItaly, following the "Regolamento di EPDItaly"; further information and the document itself are available at: www.epditaly.it. EPD document valid within the following geographical area: Italy and other countries worldwide according to sales market conditions.

CEN standard EN 15804 served as the core PCR (PCR ICMQ-001/15 v3)
 PCR review was conducted by Daniele Pace, contact via info@epditaly.it

Independent verification of the declaration and data, according to EN ISO 14025 : 2010

EPD process certification (Internal) EPD verification (External)

Third party verifier: ICMQ SpA, via De Castilia, 10 20124 Milano (www.icmq.it)

Accredited by: Accredia

Environmental declarations published within the same product category, though originating from different programs, may not be comparable. In particular, EPDs of construction products may not be comparable if they do not comply with EN 15804.

CONTACTS

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AFV BELTRAME GROUP

Technical support to Beltrame Group was provided by Life Cycle Engineering, Italy.
 (info@studiolce.it, www.lceengineering.eu).



THE COMPANY

The AFV Beltrame Group has operated in the steel industry for over a century, producing rolled sections for use in construction, shipyards, and excavators.

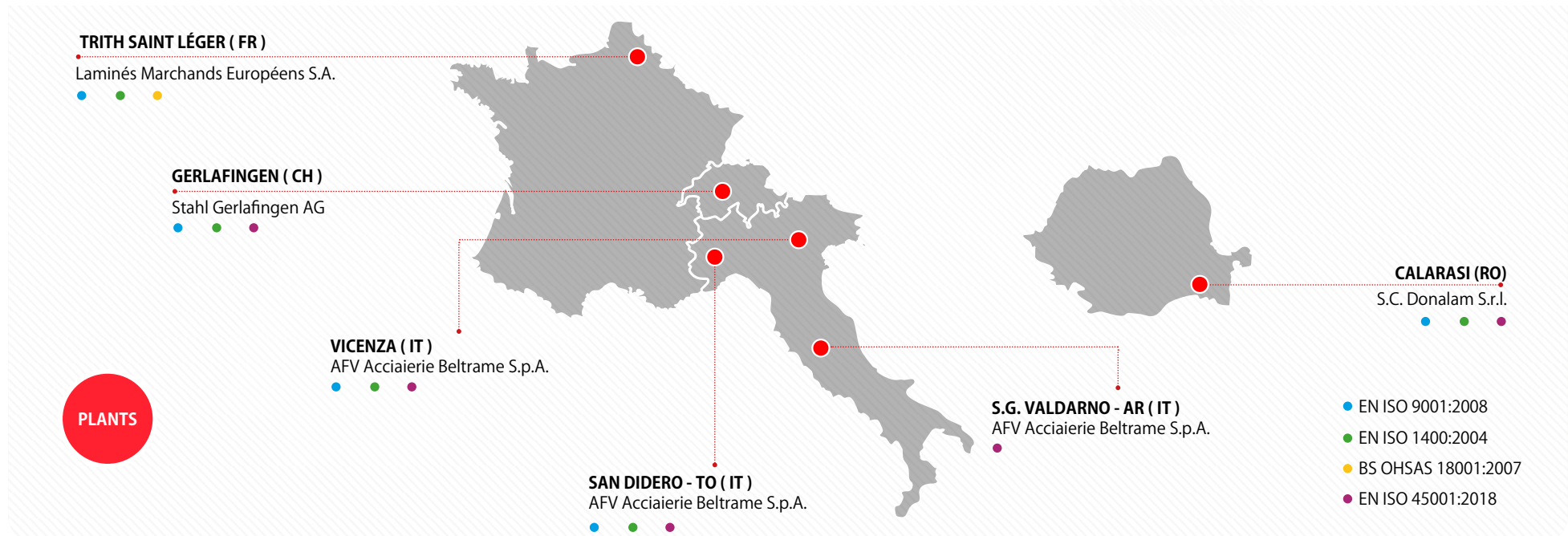
The facilities, which have a production capacity of approximately **3,2 million tons**, include three electric furnaces and ten rolling mills. These are scattered in six plants located in **Italy, France, Switzerland, and Romania.**

Their geographical distribution is very advantageous given the areas where the products are consumed and those where raw materials are purchased.

The AFV Beltrame Group is commercially present in all European markets as well as in the Mediterranean region through shares in local companies, agents, or the internal sales force. All employees, amounting to approximately **2,000 people**, are strongly committed

and motivated to satisfy the customers' needs through constant improvements in production, organization and level of service.

In order to support the principles in the code of ethics and the policy regarding **Quality, Health and Safety**, and the **Environment** (QHSE), all production plants have adopted an Integrated Management System.



SCOPE AND TYPE OF EPD®

THE APPROACH USED IN THIS EPD IS "CRADLE TO GATE WITH OPTIONS" ONE

TABLE OF MODULES

MODULE	PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
	Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
MODULE	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module declared	X	X	X	X	-	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	IT	IT	IT	WLD	-	-	-	-	-	-	-	-	WLD	WLD	WLD	WLD	WLD
Specific data used	> 90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-products	NOT RELEVANT			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-sites: Vicenza	< 10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-sites: S.D.*	9,0%	12,1%	13,1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-sites: S.G.V.**	12,5%	81,4%	19,0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TYPE OF EPD® : Product EPD®

REPORT LCA: Life Cycle Assessment (LCA) of hot rolled bars via EAF process.

REFERENCE PERIOD: 2019

GEOGRAPHICAL SCOPE OF THE EPD: World according to sales market conditions.

AVERAGING: Weighted on the plant production.

SOFTWARE: SimaPro ver. 9.1.1.1 (www.pre.nl)

MAIN DATABASE: Ecoinvent 3.6

Environmental declarations published within the same product category, though originating from different programs, may not be comparable.

*S.D. indicates San Didero Plant

**S.G.V. indicates San Giovanni Valdarno Plant

DETAILED PRODUCT DESCRIPTION

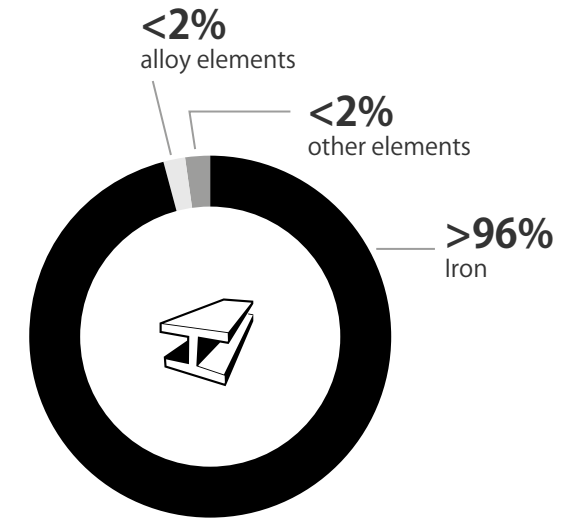
This EPD refers to construction products hot rolled structural profiles and merchant bars produced at **Vicenza, San Didero (TO)** and **San Giovanni Valdarno (AR)** plants, with electric arc furnace route, starting from post and pre consumer steel scraps, varying steel grades, e.g. S235, S275, S355, etc..

PRODUCT DIMENSIONS AND SPECIFIC STANDARDS:

- » EN 10025-1:2004 » EN 10025-5:2004,
- » EN 10025-2:2004 » Attestation of conformity system 2+ (CE marking)

CONTENT DECLARATION

The product here considered has the following composition:



PRODUCT	STANDARD	DIMENSIONS (mm)		THICKNESS (mm)	
		from	to	from	to
I sections	EN 10034:1993	80	160	5,2	7,4
Tees	EN 10055:1995	20	100	3	11
Angles	EN 10056-1:1998 EN 10056-2:1993	15	160	3	16
Angles sharp edges	DIN 1022:2004	20	100	3	11
Flats	EN 10058:2003	10	150	3	50
Wide flats	DIN 59200:2001	151	250	5	30
Squares	EN 10059:2003	-	-	10	50
Rounds	EN 10060:2003	-	-	6	30
U channels	EN 10279:2000	30	160	4	7,5

ENVIRONMENTAL PERFORMANCE

The detailed environmental performance (in terms of potential environmental impacts, use of resources and waste generation) is presented for the three phases Upstream, Core and Downstream and related sub-phases (A1-A2-A3-A4-C1-C2-C3-C4-D). Construction installation (A5) and use phase (B1 - B7) are modules not declared (MND).

DECLARED UNIT (D.U.) The declared unit is 1 tonne (1 000 kg) of hot rolled merchant bar.

	VICENZA	SAN DIDERO	SAN GIOVANNI VALDARNO	TOTAL
PRODUCTION [t]	616 375	105 862	44 700	766 937
SHARING	80%	14%	6%	100%

VICENZA, SAN DIDERO AND SAN GIOVANNI VALDARNO'S DATA HAVE BEEN ELABORATED TO GENERATE SINGLE RESULTS THAT REPRESENT A WEIGHTED AVERAGE OF THE THREE PLANTS. THE WEIGHT OF EVERY PLANT IS GIVEN ACCORDING TO THEIR PRODUCTION

AFV BELTRAME - ITALIAN PLANTS

GWP Global warming potential, total

GWP,f Global warming potential, fossil

GWP,b Global warming potential, biogenic

GWP,luluc Global warming potential, land use & land use change

ODP Ozone depletion potential

AP Acidification Potential

EP,f Eutrophication potential, freshwater

EP,m Eutrophication potential, marine

EP,t Eutrophication potential, terrestrial









POCP Photochemical ozone creation potential

ADPE Abiotic depletion potential minerals & metals

ADPF Abiotic depletion potential fossil fuels

WDP Water use deprivation potential

ENVIRONMENTAL IMPACTS PER DECLARED UNIT









POTENTIAL ENVIRONMENTAL IMPACTS	UNITS / D.U.	UPSTREAM	CORE			DOWNSTREAM				TOTAL*	D
		A1 	A2 	A3 	A4 	C1 	C2 	C3 	C4 		
GWP	kg CO ₂ eq	4,97E+02	5,00E+01	2,42E+02	8,50E+01	5,10E+01	2,62E+01	1,43E+01	1,26E-01	9,66E+02	6,31E+01
GWP,f	kg CO ₂ eq	4,97E+02	4,99E+01	2,42E+02	8,50E+01	5,10E+01	2,62E+01	1,43E+01	1,26E-01	9,65E+02	6,30E+01
GWP,b	kg CO ₂ eq	1,77E-01	7,34E-02	2,39E-01	5,13E-03	3,59E-03	1,65E-03	2,70E-02	1,74E-05	5,27E-01	8,79E-03
GWP,luluc	kg CO ₂ eq	6,89E-02	8,32E-04	7,85E-02	6,41E-04	7,40E-04	2,09E-04	9,54E-03	3,08E-06	1,59E-01	6,26E-03
ODP	kg CFC11 eq	8,66E-05	1,12E-05	8,49E-06	1,96E-05	1,15E-05	6,12E-06	2,66E-06	2,63E-08	1,46E-04	1,88E-06
AP	mol H+ eq	1,93E+00	3,70E-01	4,34E-01	4,93E-01	5,52E-01	1,51E-01	1,23E-01	1,30E-03	4,06E+00	3,04E-01
EP,f	kg P eq	1,35E-02	1,47E-04	3,73E-03	5,54E-05	4,00E-05	1,57E-05	4,31E-04	4,60E-07	1,79E-02	3,77E-03
EP,m	kg N eq	3,77E-01	1,29E-01	1,26E-01	1,98E-01	2,47E-01	6,09E-02	4,79E-02	5,65E-04	1,19E+00	5,84E-02
EP,t	mol N eq	4,22E+00	1,43E+00	1,42E+00	2,17E+00	2,71E+00	6,69E-01	5,29E-01	6,20E-03	1,32E+01	6,60E-01
POCP	kg NMVOC eq	1,42E+00	3,69E-01	3,79E-01	5,65E-01	7,42E-01	1,74E-01	1,43E-01	1,73E-03	3,79E+00	3,22E-01
ADPE	kg Sb eq	1,21E-04	3,14E-06	2,34E-04	4,71E-06	2,28E-05	1,56E-06	9,04E-06	5,23E-08	3,96E-04	1,14E-03
ADPF	MJ	9,28E+03	7,12E+02	1,11E+03	1,21E+03	7,07E+02	3,74E+02	2,26E+02	1,68E+00	1,36E+04	5,08E+02
WDP	m ³	3,81E+04	2,30E+00	3,79E+02	2,86E+01	1,37E-01	-8,23E-02	9,01E-01	5,78E-04	3,85E+04	5,63E+00

*Totals may not correspond to the sum of the individual contributes due to approximations.

AFV BELTRAME ITALIAN PLANTS

- PERE** Use of renewable primary energy excluding renewable primary energy resources used as raw materials
- PERM** Use of renewable primary energy resources used as raw materials
- PERT** Total use of renewable primary energy resources
- PENRE** Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
- PENRM** Use of non-renewable primary energy resources used as raw materials
- PENRT** Total use of non-renewable primary energy resources
- SM** Use of secondary raw materials
- RSF** Use of renewable secondary fuels
- NRSF** Use of non-renewable secondary fuels
- FW** Use of net fresh water

RESOURCE USE PER DECLARED UNIT









USE OF RESOURCES	UNITS / D.U.	UPSTREAM	CORE			DOWNSTREAM				TOTAL*	D
		A1 	A2 	A3 	A4 	C1 	C2 	C3 	C4 		
PERE	MJ	4,60E+02	1,60E+01	1,46E+02	1,70E+00	1,07E+00	5,23E-01	1,42E+01	6,35E-03	6,39E+02	4,69E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,60E+02	1,60E+01	1,46E+02	1,70E+00	1,07E+00	5,23E-01	1,42E+01	6,35E-03	6,39E+02	4,69E+01
PENRE	MJ	1,11E+04	7,08E+02	7,94E+02	1,18E+03	6,92E+02	3,65E+02	2,40E+02	1,68E+00	1,50E+04	7,56E+02
PENRM	MJ	0,00E+00	0,00E+00	4,66E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,66E+02	0,00E+00
PENRT	MJ	1,11E+04	7,08E+02	1,26E+03	1,18E+03	6,92E+02	3,65E+02	2,40E+02	1,68E+00	1,55E+04	7,56E+02
SM	kg	1,17E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,17E+03	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	8,88E+02	7,78E-02	9,28E+00	6,96E-01	1,82E-02	7,40E-03	7,20E-02	5,03E-05	8,98E+02	1,18E-01

*Totals may not correspond to the sum of the individual contributes due to approximations.

AFV BELTRAME ITALIAN PLANTS

HWD Hazardous waste disposed
NHWD Non-hazardous waste disposed
RWD Radioactive waste disposed
CRU Components for re-use
MFR Materials for recycling
MER Materials for energy recovery
EE Exported energy

OUTPUT FLOWS AND WASTE CATEGORIES PER DECLARED UNIT

WASTE GENERATION AND TREATMENT	UNITS / D.U.	UPSTREAM	CORE			DOWNSTREAM				TOTAL*	D
		A1 	A2 	A3 	A4 	C1 	C2 	C3 	C4 		
HWD	kg	0,00E+00	0,00E+00	1,84E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E+00	0,00E+00
NHWD	kg	1,02E-01	0,00E+00	6,76E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,77E+01	0,00E+00
RWD	kg	1,19E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,19E-03	0,00E+00
CRU	kg	2,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,11E-01	0,00E+00
MFR	kg	0,00E+00	0,00E+00	1,23E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,23E+02	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

*Totals may not correspond to the sum of the individual contributes due to approximations.

CALCULATION RULES

METHODOLOGY

The environmental burden of the product has been calculated according to the Regolamento EPDItaly v.5 issue by EPDItaly (cradle to gate with options).

This declaration is based on the application of Life Cycle Assessment (LCA) methodology to the whole life-cycle system.

Merchant bars at plant level, was described by using specific data from manufacturing facilities (Vicenza, San Didero and San Giovanni Valdarno) for year 2019.

Customized LCA¹ questionnaires were used to gather in-depth information about all aspects of the production system (for example, raw materials specifications, pre treatments, process efficiencies, air emissions, waste management), ultimately providing a complete picture of the environmental burden of the system from raw materials supply (A1) to Transport (A2) and Manufacturing (A3). The use phase was not considered according to PCR, while transport to final destination (A4) and end-of-life phases (C1-C2-C3-C4-D) were considered. A distance of 200 km from operation plant and dismantling site was adopted. According to PEFCR a collection rate of 0,95 was adopted. Therefore, in nominal installation and operating conditions, no emissions to air nor to water shall occur.

Data quality has been assessed and validated during data collection process. According to EN:15804 the applied cut-off criterion for mass and energy flows is 1%.

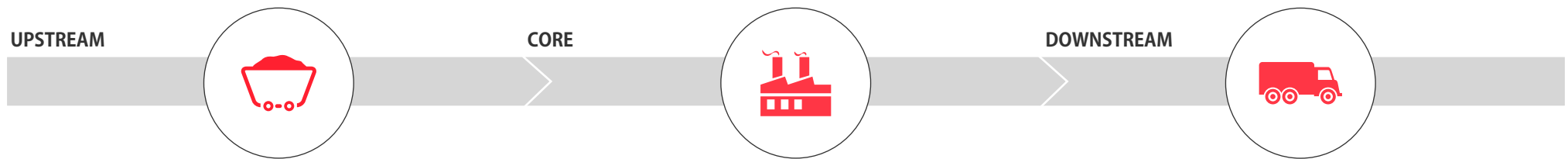
¹The LCA methodology is standardized at international level by ISO 14040 and ISO 14044.

DECLARED UNIT

Bars are usually traded in mass so that the declared unit is **1 ton of merchant bars.**



CALCULATION RULES

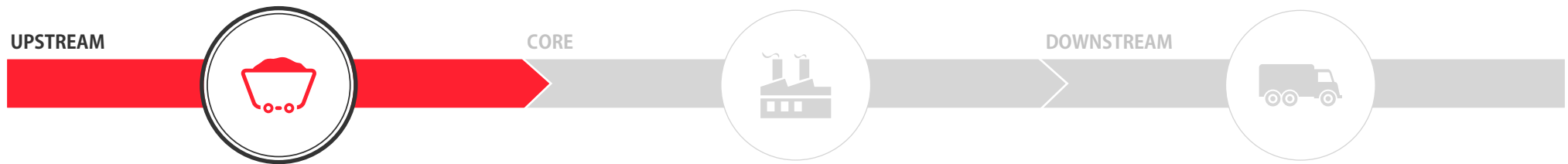


According to the PCR ICMQ-001/15 rev 3 the main activities are listed and divided in three subsystems: **UPSTREAM Process**, **CORE Module**, **DOWNSTREAM Process**

UPSTREAM PROCESS	CORE MODULE	DOWNSTREAM PROCESS
<p>Scrap pretreatment</p> <p>Demolition</p> <p>Shearing</p> <p>A1 Crushing</p> <hr/> <p>Material and energy ware production</p> <p>Other raw materials</p> <p>Energy</p>	<p>Supplying transport</p> <p>Billets production</p> <p>Hot rolling process</p> <p>Packaging</p> <p>A2+A3 Internal handing</p> <p>Ancillary activities</p> <p>Air emission</p> <p>Water emission</p> <p>Wastes</p>	<p>A4 Distribution</p> <p>C1 De-construction demolition</p> <p>C2 Transport</p> <p>C3 Waste processing</p> <p>C4 Disposal</p> <p>D Reuse - Recovery - Recycling potential</p>

Figure 1. Scheme of the considered system boundaries (including upstream, core and downstream main processes).

UPSTREAM PROCESS



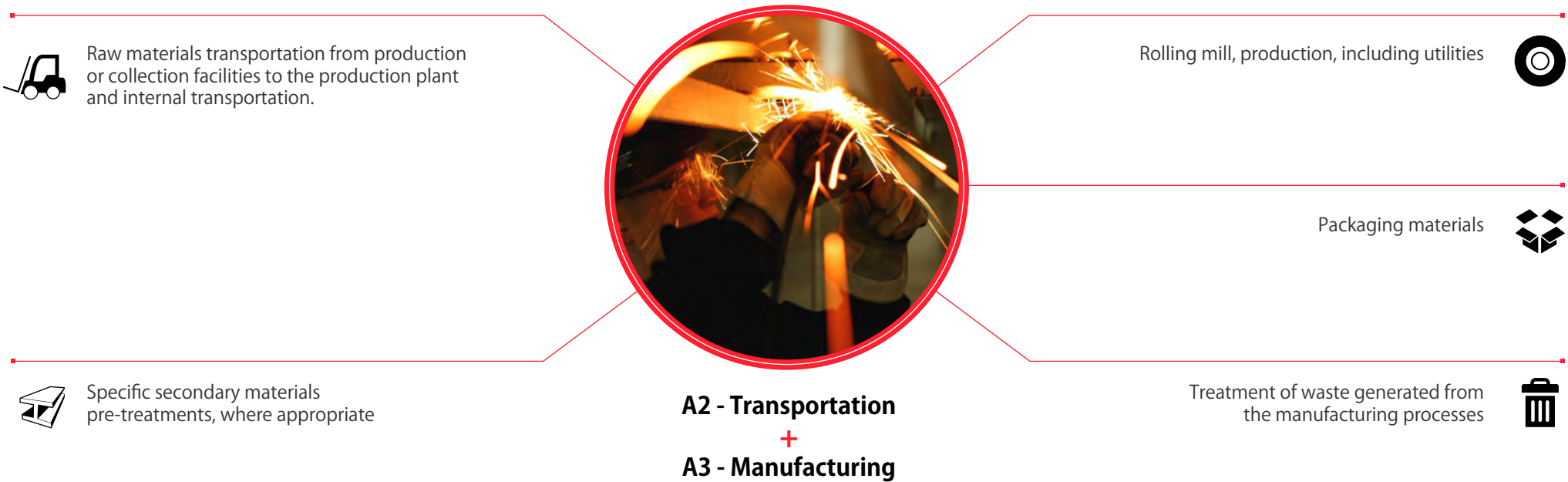
Scheme of the considered system boundaries (upstream processes).



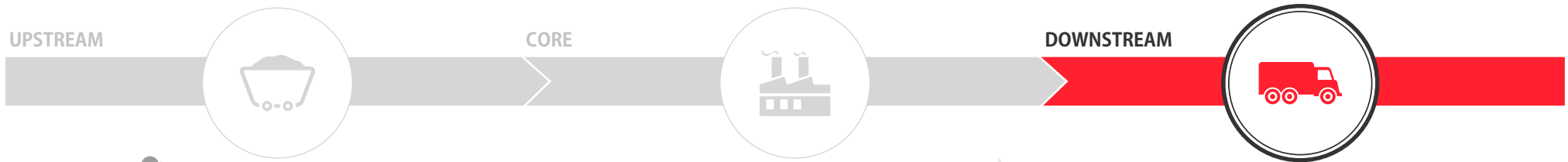
CORE PROCESS



Scheme of the considered system boundaries (core processes).



DOWNSTREAM PROCESS



A4 Distribution

Transport to the customers (general market average). Distances estimated considering the transported quantities and the distances average from Vicenza, San Didero and San Giovanni Valdarno plants to the client. Final products are delivered to many national and international areas.

C1 De-construction demolition

Dismantling and demolition operations required to remove the product from the building. Initial onsite sorting of the materials is included as well.

C2 Transport

Transportation of the discarded product as part of the waste processing (to recycling site or to a final disposal site).

C3 Waste processing

Waste processing, including collection of waste fraction from deconstruction and waste processing of material flows intended for reuse, recycling and energy recovery.

C4 Disposal

Waste disposal including physical pre-treatment and management of the disposal site.

D Reuse - Recovery - Recycling potential

Environmental impacts associated to waste use after the investigated system (including recycling).

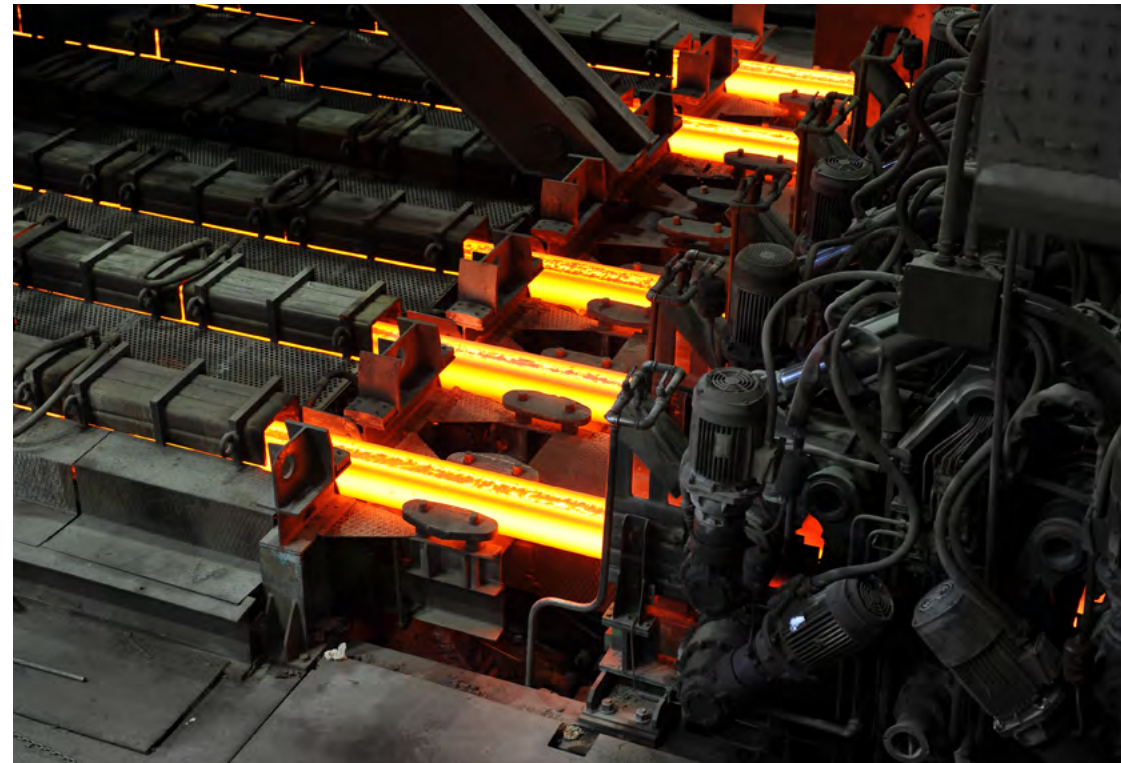
ADDITIONAL INFORMATION

Main environmental characteristics of the considered plants are:

1. EAF primary and secondary dedusting achieve an efficient extraction of all emission sources by using direct off-gas extraction (shaft) and total building evacuation, with subsequent dedusting by means of a bag filter
2. Prevention and reduction of (PCDD/F) and (PCB) emissions by using the combination of the following techniques,
 - appropriate rapid quenching of the EAF off-gas
 - injection of adsorption agents into the duct
 - final dedusting with a bag filter.
3. Minimisation of water consumption by using a recirculating loop cooling system with purge recovery. Removal of solids by sedimentation or filtration, removal of oil with skimming devices.
4. Prevention and reduction of waste generation by using the following techniques:
 - I. appropriate collection and storage to facilitate specific treatments;
 - II. on-site recovery and recycling of specific by-products from the different processes;
 - III. external recovery of filter dusts in the non-ferrous metal industry (zinc, lead);
 - IV. separation of scale in the water treatment process and external recovery in the cement and blast-furnace industry;
 - V. recovery of EAF slag as a secondary raw material (inert aggregates) in the construction industry.

5. Radiation monitoring of scraps and raw materials by means of detection equipment installed at the weighing post.

In accordance with general EPDItaly requirements the LCA study used specific, generic and other generic data. This last data contributes to the environmental indicators less than 10%.



REFERENCES

- EN 15804:2012+A2:2019
- ISO 14040 : 2006
- ISO 14044 : 2006
- Life Cycle Assessment (LCA) of hot rolled bars via EAF process - italian average
- Regolamento di EPDIItaly, v5 (2020-07-01)
- PCR ICMQ-001/15 v 3 (2019-12-02)

ANNEX

In the following tables, the aggregated values A1-A4, C1-C4, D, are shown separately for the three plants.

Indicator	Unit	VICENZA			SAN DIDERO			SAN GIOVANNI VALDARNO		
		A1-A4	C1-C4	D	A1-A4	C1-C4	D	A1-A4	C1-C4	D
GWP	kg CO ₂ eq	8,59E+02	9,16E+01	6,31E+01	9,14E+02	9,16E+01	6,31E+01	1,00E+03	9,16E+01	6,31E+01
GWP,f	kg CO ₂ eq	8,58E+02	9,16E+01	6,30E+01	9,13E+02	9,16E+01	6,30E+01	9,99E+02	9,16E+01	6,30E+01
GWP,b	kg CO ₂ eq	4,70E-01	3,22E-02	8,79E-03	6,31E-01	3,22E-02	8,79E-03	5,08E-01	3,22E-02	8,79E-03
GWP,luluc	kg CO ₂ eq	1,47E-01	1,05E-02	6,26E-03	1,56E-01	1,05E-02	6,26E-03	1,57E-01	1,05E-02	6,26E-03
GWP,ghg	kg CO ₂ eq	8,58E+02	9,16E+01	6,31E+01	9,14E+02	9,16E+01	6,31E+01	1,00E+03	9,16E+01	6,31E+01
ODP	kg CFC11 eq	1,24E-04	2,03E-05	1,88E-06	1,27E-04	2,03E-05	1,88E-06	1,47E-04	2,03E-05	1,88E-06
AP	mol H+ eq	3,22E+00	8,28E-01	3,04E-01	3,15E+00	8,28E-01	3,04E-01	3,62E+00	8,28E-01	3,04E-01
EP,f	kg P eq	1,71E-02	4,87E-04	3,77E-03	1,88E-02	4,87E-04	3,77E-03	1,87E-02	4,87E-04	3,77E-03
EP,m	kg N eq	8,33E-01	3,57E-01	5,84E-02	7,55E-01	3,57E-01	5,84E-02	9,46E-01	3,57E-01	5,84E-02
EP,t	mol N eq	9,28E+00	3,92E+00	6,60E-01	8,44E+00	3,92E+00	6,60E-01	1,05E+01	3,92E+00	6,60E-01
POCP	kg NMVOC eq	2,74E+00	1,06E+00	3,22E-01	2,54E+00	1,06E+00	3,22E-01	3,09E+00	1,06E+00	3,22E-01
ADPE	kg Sb eq	3,57E-04	3,34E-05	1,14E-03	3,77E-04	3,34E-05	1,14E-03	4,04E-04	3,34E-05	1,14E-03
ADPF	MJ	1,20E+04	1,31E+03	5,08E+02	1,30E+04	1,31E+03	5,08E+02	1,44E+04	1,31E+03	5,08E+02
WDP	m ³	3,85E+04	9,57E-01	5,63E+00	3,87E+04	9,57E-01	5,63E+00	3,91E+04	9,57E-01	5,63E+00

Indicator	Unit	VICENZA			SAN DIDERO			SAN GIOVANNI VALDARNO		
		A1-A4	C1-C4	D	A1-A4	C1-C4	D	A1-A4	C1-C4	D
PERE	MJ	6,09E+02	1,58E+01	4,69E+01	6,86E+02	1,58E+01	4,69E+01	6,71E+02	1,58E+01	4,69E+01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	6,09E+02	1,58E+01	4,69E+01	6,86E+02	1,58E+01	4,69E+01	6,71E+02	1,58E+01	4,69E+01
PENRE	MJ	1,33E+04	1,30E+03	7,56E+02	1,51E+04	1,30E+03	7,56E+02	1,65E+04	1,30E+03	7,56E+02
PENRM	MJ	5,76E+02	0,00E+00	0,00E+00	1,58E+01	0,00E+00	0,00E+00	1,95E+01	0,00E+00	0,00E+00
PENRT	MJ	1,39E+04	1,30E+03	7,56E+02	1,51E+04	1,30E+03	7,56E+02	1,65E+04	1,30E+03	7,56E+02
SM	kg	1,17E+03	0,00E+00	0,00E+00	1,17E+03	0,00E+00	0,00E+00	1,18E+03	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	8,97E+02	9,77E-02	1,18E-01	9,03E+02	9,77E-02	1,18E-01	9,11E+02	9,77E-02	1,18E-01
HWD	kg	2,25E+00	0,00E+00	0,00E+00	1,57E-01	0,00E+00	0,00E+00	2,10E-01	0,00E+00	0,00E+00
NHWD	kg	8,42E+01	0,00E+00	0,00E+00	1,62E-01	0,00E+00	0,00E+00	6,71E-01	0,00E+00	0,00E+00
RWD	kg	1,19E-03	0,00E+00	0,00E+00	1,19E-03	0,00E+00	0,00E+00	1,20E-03	0,00E+00	0,00E+00
CRU	kg	2,10E-01	0,00E+00	0,00E+00	2,11E-01	0,00E+00	0,00E+00	2,13E-01	0,00E+00	0,00E+00
MFR	kg	1,40E+02	0,00E+00	0,00E+00	5,93E+01	0,00E+00	0,00E+00	3,89E+01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00