

# Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

## Steel Billets

From

**Guangxi Iron And Steel Group Company Limited**



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**Programme :**

**The EFI Program**

**Programme Operator :**

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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at Guangxi Iron And Steel Group Company Limited



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## General Information

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### Product Category Rules (PCR)

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PCR review was conducted by: The Environmental Footprint Institute.

Product category rules (PCR): Under the general rules of the Environmental Footprint Institute and PCR P-3100: Construction products in general (EN-15804)

PCR review was conducted by: Environmental Footprint Institute

#### Life Cycle Assessment (LCA)

LCA accountability: CQES International LLC



Internal Verification

Third Party Verification

Accredited by: THE ENVIRONMENTAL FOOTPRINT INSTITUTE

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Procedure for follow-up of data during EPD validity involves Internal verifier:

Yes

No

The EPD owner has the sole ownership, liability and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programs may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison.



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## Company Information

Owner of the EPD :

**Guangxi Iron And Steel Group Company Limited**

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Guangxi Iron And Steel Group Company Limited (GXISG) is a major steel producer and a key industrial enterprise in Southern China, integral to regional infrastructure development. Located in the Fangchenggang Port Area, the company leverages strategic logistical advantages for both domestic supply and international export.

GXISG operates a modern, integrated steel production complex utilizing advanced blast furnace and basic oxygen furnace technology. The company is committed to sustainable development, incorporating energy-efficient processes and continuous environmental improvement initiatives into its operations.

The main production lines are designed for high efficiency and product quality, manufacturing a range of steel products that serve the construction, manufacturing, and infrastructure sectors. GXISG's product portfolio includes various grades of steel billets, rebars, wire rods, and other long steel products, which are supplied to meet stringent domestic and international standards.

In alignment with national ecological civilization goals and global sustainability principles, GXISG has implemented significant environmental protection measures. The company invests in technologies to reduce emissions, improve resource efficiency, and manage by-products. GXISG is also involved in local ecological initiatives, contributing to greenbelt development and biodiversity conservation in its operating region.

The company places a strong emphasis on talent development, operational safety, and community engagement, upholding high standards in corporate social responsibility.





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## Certifications



The data and environmental performance presented in this EPD are supported by the company's certified management systems. Guangxi Iron And Steel Group Company Limited holds certifications for ISO 14001 (Environmental Management) and ISO 50001 (Energy Management), which ensure systematic monitoring and reduction of environmental aspects and energy consumption. Furthermore, our ISO 9001 (Quality Management) and ISO 45001 (Safety Management) certifications guarantee the consistency and controlled conditions under which the reported product is manufactured. This integrated approach enhances the reliability of the life cycle inventory data.

## Product Information

Product Name : **Steel Billets**

Product identification :

The results presented in this EPD are representative of all steel billets manufactured at the GXISG melt shop. The results are calculated on a per-ton basis, considering the total production volume, total consumption of raw materials, and total generation of waste and emissions from the GXISG facilities during the reference period.

UN CPC Code

41220 - Semi-finished products of iron or non-alloy steel

Geographical Scope

People's Republic of China

Location of Production Site :

Fangchenggang City, Guangxi

Product Description :

Steel billets are semi-finished steel products with square and rectangular cross-sections, manufactured in dimensions of 165 mm x 165 mm and 150 mm x 150 mm. They are produced to meet specific chemical compositions, dimensions, and shapes according to customer and application requirements.

The billets are manufactured in integrated melt shops using iron ore and coal-based furnace technology. While the billets belong to the same product family, variations in chemical composition and input material proportions may occur depending on the grade and customer specification. These variations are described in Table on page 8 (Product Content), which presents the typical range of raw material inputs used in billet production.

## Process Description



## LCA Information

### Declared Unit :

The Declared Unit of the Life Cycle Assessments is one tonne (1000 kilogram) of steel billets. All direct and indirect environmental impacts, as well as the use of resources, are reported referred to this unit. This EPD presents the environmental impacts associated to the LCA of the analysed products.

### Time Representativeness :

Jan 2025 to Dec 2025

### Database(s) and LCA software used:

Version 3.20.1.0 of software Air.e LCA™ with Ecoinvent™ 3.11.0 database has been used for LCA modeling and impacts calculations. EN15804 system model is used in this LCA.

### Electricity usage in A3 :

A specific dataset with the Life Cycle Inventory (LCI) corresponding to the electricity mix in China, has been used for this LCA. 0.7845 kg CO<sub>2</sub>eq/kWh (GWP-GHG),

### Cut-off rules:

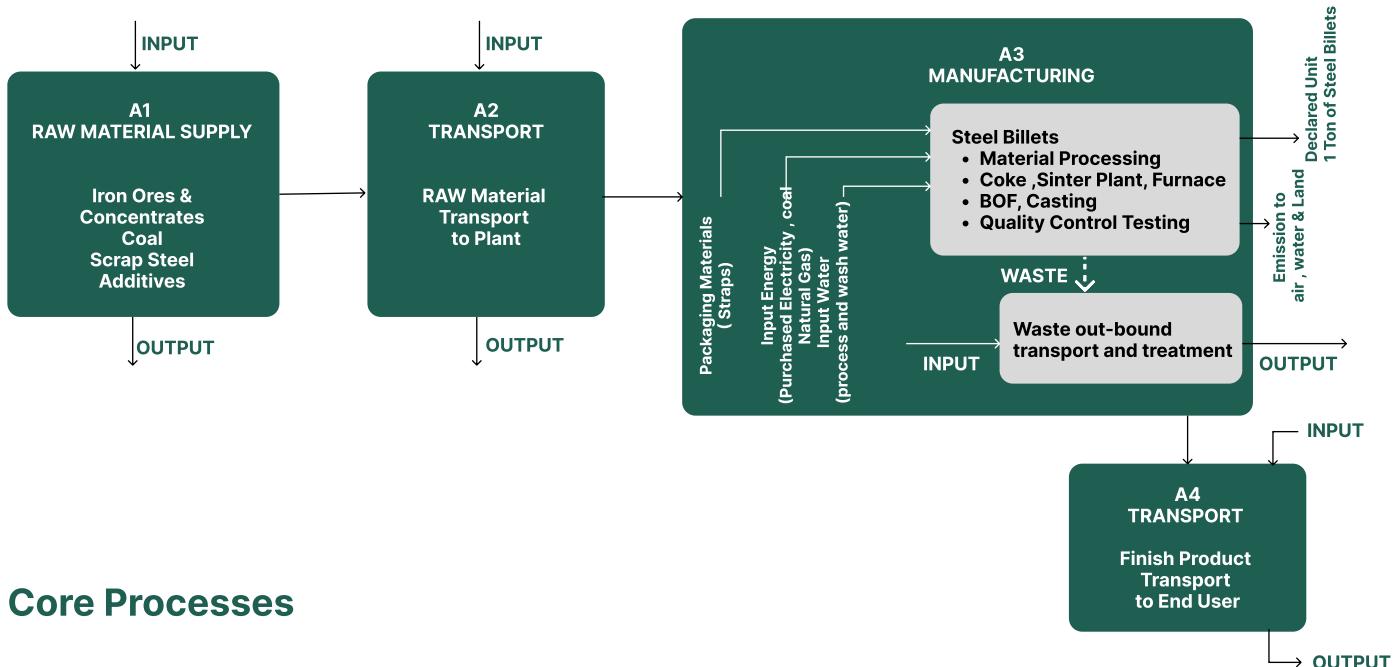
More than 99% of the materials and energy consumption have been included. The Polluter Pays Principle and the Modularity Principle have been followed.

### Allocation method:

During steel production, slag is generated as a co-product and is sold for use in cement production and road construction. In accordance with EN 15804 allocation rules, environmental impacts between steel billets and slag have been allocated based on economic value. This allocation reduces the environmental burden attributed to steel billets, reflecting the real-world application of co-product utilization.

## Description of system boundaries:

This EPD follows a cradle-to-gate with options approach, covering Modules A1–A3 (raw material supply, transport, and manufacturing) and A4 (transport to customer). End-of-life Modules C1–C4 and Module D (benefits and loads beyond the system boundary) are included based on standardized assumptions for steel billets. Use-stage Modules A5 & B1–B7 are excluded, as steel billets are semi-finished products and their downstream use is outside the declared scope.



## Core Processes

### Upstream Stage

This Stage includes the extraction and production of raw materials (coal, scrap, limestone, dolomite, chemicals etc.) and the transportation to the steel manufacturing facility.

**A1-Raw Material Supply:** The A1 module covers the extraction, processing, and upstream transportation of raw materials used in the production of steel billets at Guangxi Iron And Steel Group Company Limited. This includes the mining, preparation, and delivery of iron ore, coal, and limestone, as well as the production of coke in coke ovens and sinter in the sinter plant.

All raw materials used are either sourced locally within China or imported through International suppliers. This stage also includes the energy consumption and emissions from pre-processing activities before the steelmaking process begins.

**A2 - Transport:** The A2 module includes the transportation of raw materials from their point of extraction or processing to the Guangxi Iron And Steel Group Company Limited manufacturing site in China. Transport of raw materials to production site is taken as the weight average values for transport from supplier for the year of 2025.

- Vehicle used for transport - 3.5-7.5t & >32t trucks, Euro 5
- Vehicle capacity - 3.5 -7.5 tons and 25 tons
- Fuel type and consumption - Diesel, 0.38 liters per km
- Capacity utilization (including empty poly cartages) - 50% as assumed in Eco invent
- Bulk transportation - Mass of the transported product.

## Core Stage

This Stage includes the manufacturing process for steel billets including core process related material consumption, energy production and consumption (included electricity, coal etc.), emission to air and water, waste generated during manufacturing and its treatment (slag, sludges, etc) and emission generated during manufacturing.

### A3 - Manufacturing:

The A3 stage encompasses all processes occurring within the Guangxi Iron And Steel Group Company Limited manufacturing facility from the receipt of raw materials at the plant gate to the final production of steel billets. Then, the final products are quality checked and packaged for delivery. CO<sub>2</sub> emissions from fuel combustion (coal, natural gas, and coke oven gas) were calculated using carbon content factors and the IPCC 44/12 conversion ratio. Electricity data used in this EPD is CN grid mix Ecoinvent, market for electricity, low voltage; natural gas data is global heat production, natural gas, at industrial furnace >100kW; and coal data is heat production, at coal coke industrial furnace 1-10MW."

### A4 - Transportation of Goods:

Stage A4 represents the transportation and distribution of finished products (e.g., steel billets) from the production facility to the customer or point of sale. This includes:

- Emissions from fuel combustion during road, rail and sea transport.
- Consideration of transport modes, distances, and vehicle types used.

### C1 – Deconstruction / Demolition :

Module C1 covers the activities associated with the deconstruction or demolition of the product at the end of its service life. This includes the removal of the product from its original location, dismantling of components, and preparation of materials for subsequent transport and treatment. No specific energy use or additional treatment processes related to demolition or deconstruction are considered at the end-of-life stage.

### C2 – Transport :

Module C2 accounts for the transportation of deconstructed materials from the demolition site to appropriate recycling or disposal facilities. Transport of the demolished product to the recycling facility is considered, with an assumed average transport distance of 50 km by road.

### C3 – Waste Processing

Module C3 covers the processing of deconstructed materials for reuse, recycling, or recovery. This includes activities such as sorting and preparing materials to enable resource recovery. It is assumed that steel waste is collected separately, and the electrical energy required for sorting is 0.05 kWh per kg of steel. After the end of its useful life, 21% of the product is assumed to be reclaimed and recycled, re-entering the manufacturing process as secondary raw material.

### C4 – Disposal :

Module C4 represents the final disposal of waste materials that cannot be reused, recycled, or further treated. After the end of its useful life, the remaining 79% of the product is assumed to be disposed of via landfill.

### Module D – Benefits and Loads Beyond the System Boundary :

Module D accounts for the potential environmental benefits and loads associated with the recycling of materials beyond the system boundary. Due to the absence of billet-specific end-of-life statistics, national steel recycling data for China is used as a proxy in accordance with EN 15804. Industry statistics indicate that approximately 21% of steel in China is recycled, based on the share of scrap used in crude steel production, while the remaining 79% is assumed to be disposed of or not recovered.

## More Information

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

Module	Product Stage			Construction Process Stage		Use Stage	End of life stage			Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation		De-construction demolition	Transport	Waste processing	
A1	A2	A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	CN	CN	CN	CN
Geography	CN GLO	CN GLO	CN	CN GLO	CN GLO	--	--	--	--	--
Specific data used	>90%			--	--	--	--	--	--	--

\* X - Included    CN - China    ND - Not Included    GLO - Global

### Assumptions :

This Environmental Product Declaration (EPD) for steel billets is based on the following key assumptions, consistent with EN 15804:2012+A2:2019 and ISO 14025. The declared unit is one tonne (1,000 kg) of steel billets produced at Guangxi Iron And Steel Group Company Limited (GXISG) during the calendar year 2025. The system boundary follows a cradle-to-gate with options approach, covering raw material supply (A1), transport to plant (A2), manufacturing (A3), transport to customer (A4), and end-of-life stages (C1–C4), including benefits beyond the system boundary (D). Use-stage modules (A5, B1–B7) are excluded, as steel billets are semi-finished products.

Allocation of environmental impacts between steel billets and slag—a co-product sold for cement production and road construction—is based on economic value, in accordance with EN 15804 allocation rules. Cut-off rules have been applied such that more than 99% of material and energy flows are included. Primary data for the core production stages (A1–A3) were collected directly from GXISG operations for the reference year 2025. Secondary background data were sourced from the Ecoinvent 3.11.0 database, and impact assessment was performed using Air.e LCA software (v3.20.1.0) with EN 15804 characterization factors.

CO<sub>2</sub> emissions from fuel combustion in the manufacturing stage (A3) were calculated using carbon content factors for each fuel type (coal, natural gas, coke oven gas) and the IPCC-recommended 44/12 conversion ratio for carbon to CO<sub>2</sub>. Electricity consumption is modeled using the Chinese grid mix (0.7845 kg CO<sub>2</sub>eq/kWh). Transport distances and modes are based on 2025 average logistics data, assuming Euro 5 diesel trucks with 50% capacity utilization.

End-of-life assumptions are derived from national steel recycling statistics for China, with 21% of steel assumed to be recycled and 79% landfilled. Transport of demolition waste to recycling or disposal facilities is assumed to be 50 km by road.



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## Content Information

### Product Content:

Product Components	Weight %	Post-Consumer material weight -%	Biogenic material, kg C/kg
Iron Ores & Concentrates	60-65	0	0
Coking Coal	15-20	0	0
PCI Coal	5-7	0	0
Scrap Steel	5-10	0	0
Fluxes	3-5	0	0
Primary Alloys	0.5-1	0	0
Additives	1-2	0	0
Refractories & Process Items	0.1-0.7	0	0

### Packaging Material Content:

Packaging Material	Weight (kg)/DU	Weight % (Versus the Product)	Weight biogenic carbon, kg C/kg
Wooden Blocks	6.51E-06	6.51E-04	2.90E-06

### Dangerous substances from the candidate list of SVHC for Authorisation:

Dangerous substances from the candidate list of SVHC for Authorisation:	EC No.	CAS No.	Weight-% per declared unit
None	--	--	--
None	--	--	--

### Biogenic carbon content:

Biogenic carbon content	A1-A3/Unit
Biogenic carbon content in product	0.00E+00 kg C
Biogenic carbon content in accompanying packaging	2.90E-06 kg C

## Manufacturing Process:

Steel billet manufacturing at Guangxi Iron And Steel Group Company Limited follows an integrated BF-BOF route, starting with iron ore, coal, and limestone, which are processed in coke ovens and sinter plants to prepare burden materials for the blast furnace, where molten iron (hot metal) is produced. This hot metal is then refined in the basic oxygen furnace (BOF) with scrap steel and oxygen to remove impurities and adjust composition. The molten steel is further treated in secondary metallurgy for precise quality control and then cast into steel billets using a continuous casting machine, followed by inspection, testing, and storage for downstream processing.

## Technical information:

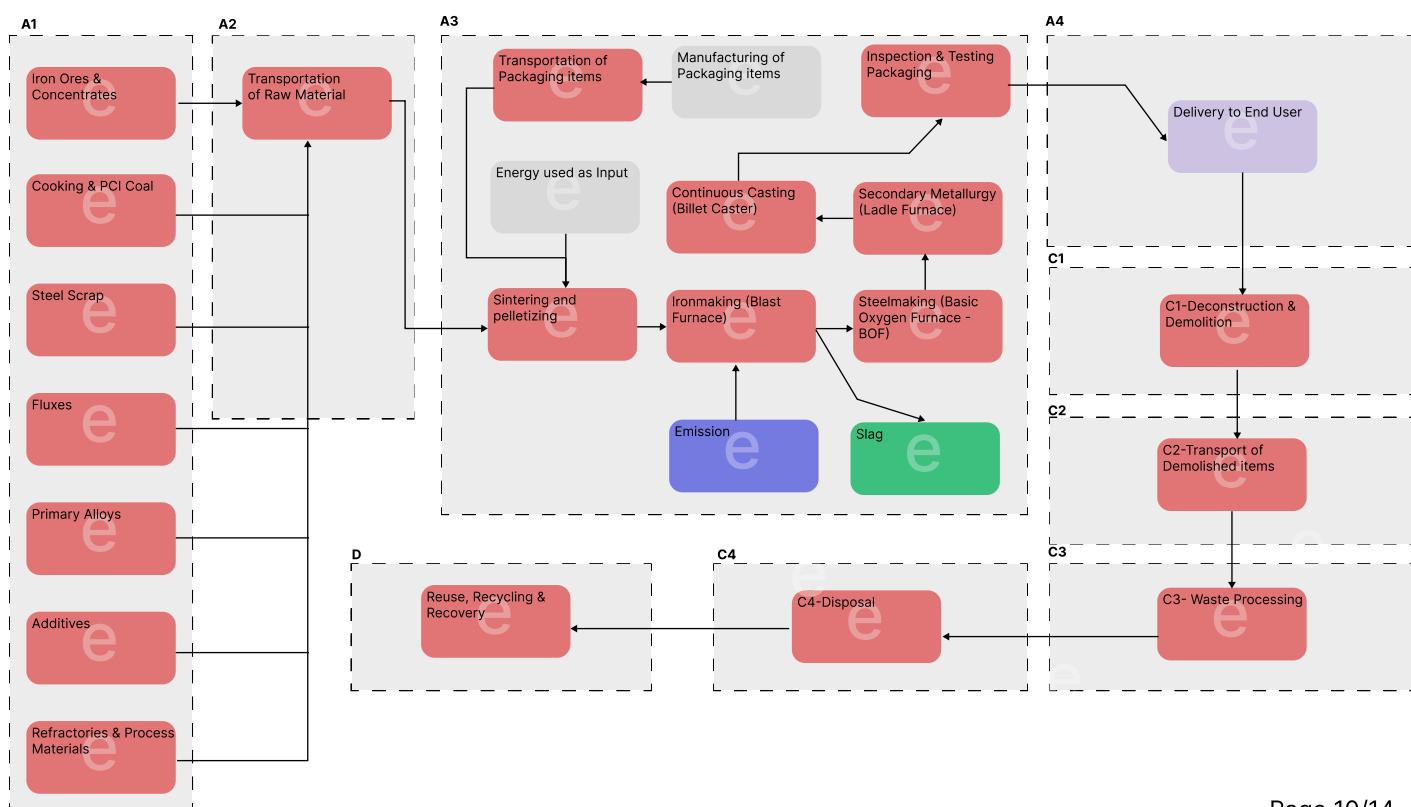
For more technical information about the Steel Billets, please refer to the product TDS

## Data quality:

The environmental impact has been calculated based on the international standards established for the development of environmental product declarations, such as ISO14025 for the preparation of the environmental product declaration, ISO 14040 and ISO 14044 for the preparation of the life cycle analysis, UNE-EN 15804:2012+A2:2019 and the Product Category Rules PCR 2015:03, version 2.0, UN CPC code: 4112 and 412.

Data has been collected in 2025 and is representative of that year. Data for raw material supply, transport to the manufacturing plant and production (A1-A3) is based on specific consumption data for the factory at China. Generic background datasets were used for the upstream and downstream processes. Air.e LCA Version 3.20.1.0 software was used to prepare the life cycle analysis together with the Ecoinvent 3.11.0 database. Characterization factors from EN 15804:2012+A2:2019.

## Life Cycle Assessment Modelling



## Environmental Performance

### Potential Environment Impacts

In the following tables, the environmental performance of the declared units "One ton of Product steel billet is presented for the GUANGXI IRON AND STEEL GROUP COMPANY LIMITED. During the assessment it was not evident to distinguish the differences in the consumption of electricity, water, raw material and chemicals during the manufacturing. Hence, the calculation is based on total production vs total consumption against production of the product.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding thresholds values, safety margins or risks.

### Core Environmental Impact Indicators

Impact category indicators according to EN 15804 (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-Total	kg CO <sub>2</sub> eq.	2.87E+03	1.06E+02	0.00E+00	ND	0.00E+00	9.59E+00	3.90E-05	4.95E+00	-1.89E+01						
GWP-fossil	kg CO <sub>2</sub> eq.	2.87E+03	1.06E+02	0.00E+00	ND	0.00E+00	9.58E+00	3.90E-05	4.94E+00	-2.50E+01						
GWP-biogenic	kg CO <sub>2</sub> eq.	8.21E-01	2.05E-02	0.00E+00	ND	0.00E+00	1.50E-03	8.46E-09	1.53E-03	6.12E+00						
GWP-luluc	kg CO <sub>2</sub> eq.	9.22E-01	6.21E-02	0.00E+00	ND	0.00E+00	3.90E-03	2.53E-08	2.83E-03	-3.85E-02						
ODP	kg CFC 11 eq.	9.58E-06	1.43E-06	0.00E+00	ND	0.00E+00	1.42E-07	1.30E-13	1.38E-07	-3.18E-07						
AP	mol H <sup>+</sup> eq.	2.82E+01	1.93E+00	0.00E+00	ND	0.00E+00	2.20E-02	2.28E-07	3.46E-02	-2.76E-01						
EP-freshwater	kg P eq.	2.32E+00	6.92E-03	0.00E+00	ND	0.00E+00	7.57E-04	7.76E-09	4.33E-04	-1.37E-02						
EP-marine	kg N eq.	3.93E+00	4.53E-01	0.00E+00	ND	0.00E+00	5.17E-03	4.69E-08	1.33E-02	-5.77E-02						
EP-terrestrial	mol N eq.	4.40E+01	5.02E+00	0.00E+00	ND	0.00E+00	5.50E-02	5.00E-07	1.45E-01	-7.12E-01						
POCP	kg NMVOC eq.	1.38E+01	1.45E+00	0.00E+00	ND	0.00E+00	3.07E-02	1.35E-07	5.24E-02	-2.10E-01						
ADP-minerals & metals*	kg Sb eq.	1.97E-01	2.05E-04	0.00E+00	ND	0.00E+00	3.12E-05	1.99E-10	7.20E-06	-1.52E-03						
ADP-fossil*	MJ	2.71E+04	1.35E+03	0.00E+00	ND	0.00E+00	1.42E+02	4.72E-04	1.21E+02	-3.28E+02						
WDP*	m <sup>3</sup>	3.12E+02	5.35E+00	0.00E+00	ND	0.00E+00	7.59E-01	5.26E-06	5.35E+00	-4.69E+00						
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

#### Note on Declared Modules:

The environmental impacts presented above are for modules A1–A4 only.

- Module B (Use Stage) is considered null for this semi-finished product, as its use phase depends on further downstream processing.
- Modules C (End-of-Life) and D (Beyond System Boundary) are not included in this cradle-to-gate assessment.

Results reflect allocation for co-product (slag) where applicable.

\*CO<sub>2</sub> emissions from fuel combustion in A3 were calculated using standard carbon content factors and the 44/12 molecular weight ratio, in accordance with IPCC guidelines.

### Environmental Impact -GWP-GHG

Additional mandatory and voluntary impact category indicators (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO <sub>2</sub> eq.	3.03E+03	1.06E+02	0.00E+00	ND	0.00E+00	9.66E+00	3.91E-05	5.06E+00	1.11E+01						



## Use of Natural Resources

Resource use indicators (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.18E+03	1.48E+01	0.00E+00	ND	0.00E+00	1.79E+00	3.35E-05	1.13E+00	4.80E+00						
PERM	MJ	1.36E-01	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
PERT	MJ	1.18E+03	1.48E+01	0.00E+00	ND	0.00E+00	1.79E+00	3.35E-05	1.13E+00	4.80E+00						
PENRE	MJ	7.49E+03	1.35E+03	0.00E+00	ND	0.00E+00	1.35E+02	4.72E-04	1.21E+02	3.62E+01						
PENRM	MJ	1.97E+04	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
PENRT	MJ	2.72E+04	1.35E+03	0.00E+00	ND	0.00E+00	1.35E+02	4.72E-04	1.21E+02	3.62E+01						
SM	kg	1.36E+01	7.02E-01	0.00E+00	ND	0.00E+00	6.12E-02	6.34E-08	3.01E-02	6.41E-02						
RSF	MJ	2.57E-01	3.90E-03	0.00E+00	ND	0.00E+00	7.82E-04	4.14E-10	6.29E-04	5.07E-03						
NRSF	MJ	3.83E-02	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
FW	m <sup>3</sup>	2.42E+06	1.31E-01	0.00E+00	ND	0.00E+00	1.85E-02	1.40E-07	1.25E-01	1.82E-02						
Acronyms	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 material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

## End of Life - Outflows

Output flow indicators (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
Material for recycling	kg	1.95E+02	9.71E-01	0.00E+00	ND	0.00E+00	1.00E-03	4.73E-08	1.31E-03	2.02E+02						
Materials for energy recovery	kg	2.05E-03	5.24E-05	0.00E+00	ND	0.00E+00	8.82E-06	1.62E-11	2.33E-06	6.87E-06						
Exported energy, electricity	MJ	2.14E+00	9.10E-02	0.00E+00	ND	0.00E+00	9.92E-03	1.00E-08	7.86E-03	1.46E-02						
Exported energy, thermal	MJ	3.87E+00	1.05E-01	0.00E+00	ND	0.00E+00	2.01E-02	2.56E-08	4.17E-03	5.14E-03						

## End of Life - waste

Waste indicators (Results per functional or declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3.22E+02	2.49E+00	0.00E+00	ND	0.00E+00	2.38E-01	5.49E-06	1.38E-01	3.67E-01						
Non-hazardous waste disposed	kg	1.02E+04	4.18E+01	0.00E+00	ND	0.00E+00	4.46E+00	3.66E-05	3.19E+00	1.45E+01						
Radioactive waste disposed	kg	1.01E-02	2.07E-04	0.00E+00	ND	0.00E+00	2.74E-05	1.14E-09	1.77E-05	4.76E-05						



## Additional information

No additional information is provided.

## Information related to Sector EPD

This is not sector EPD.

## Differences versus previous versions

This is the first version of the EPD.

## References

*LCA Report: Life Cycle Inventory of GUANGXI IRON AND STEEL GROUP COMPANY LIMITED, China.*

*Software: Air.e LCA Version 3.20.1.0 [www.solidforest.com](http://www.solidforest.com)*

*Main database: Ecoinvent 3.11.0 [www.ecoinvent.org](http://www.ecoinvent.org)*

*Geographical scope of the EPD: China.*

*ISO 14040:2006 "Environmental management -- life cycle assessment -- principles and framework";*

*ISO 14044:2006 "Environmental management -- life cycle assessment -- requirements and guidelines";*

*ISO 14020:2000 "Environmental Labels and declarations - General Principles*

*ISO 14025:2006 "Environmental labels and declarations -- type III environmental declarations - principles and procedures".*

*EN 15804+A2:2019/AC:2021 European Committee for Standardization: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.*

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World Steel Association (worldsteel) – Steel Statistical Yearbook (Scrap usage and recycling trends in China)



**GUANGXI IRON AND STEEL GROUP COMPANY LIMITED**