CREME Webinar on "Carbon Footprint of Steel Products"

ISO 20915 standard application in Japan

The Japan Iron and Steel Federation

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6. LCA promotion by JISF

Overview of The Japan Iron and Steel Federation

History

- Established in 1948
- Reorganized through consolidation with the Kozai Club and the Japan Iron & Steel Exporters' Association

JISF's Mission

Promoting production, distribution, consumption and trade of steel products, thereby contributing to the development of the Japanese economy and the improvement of society.

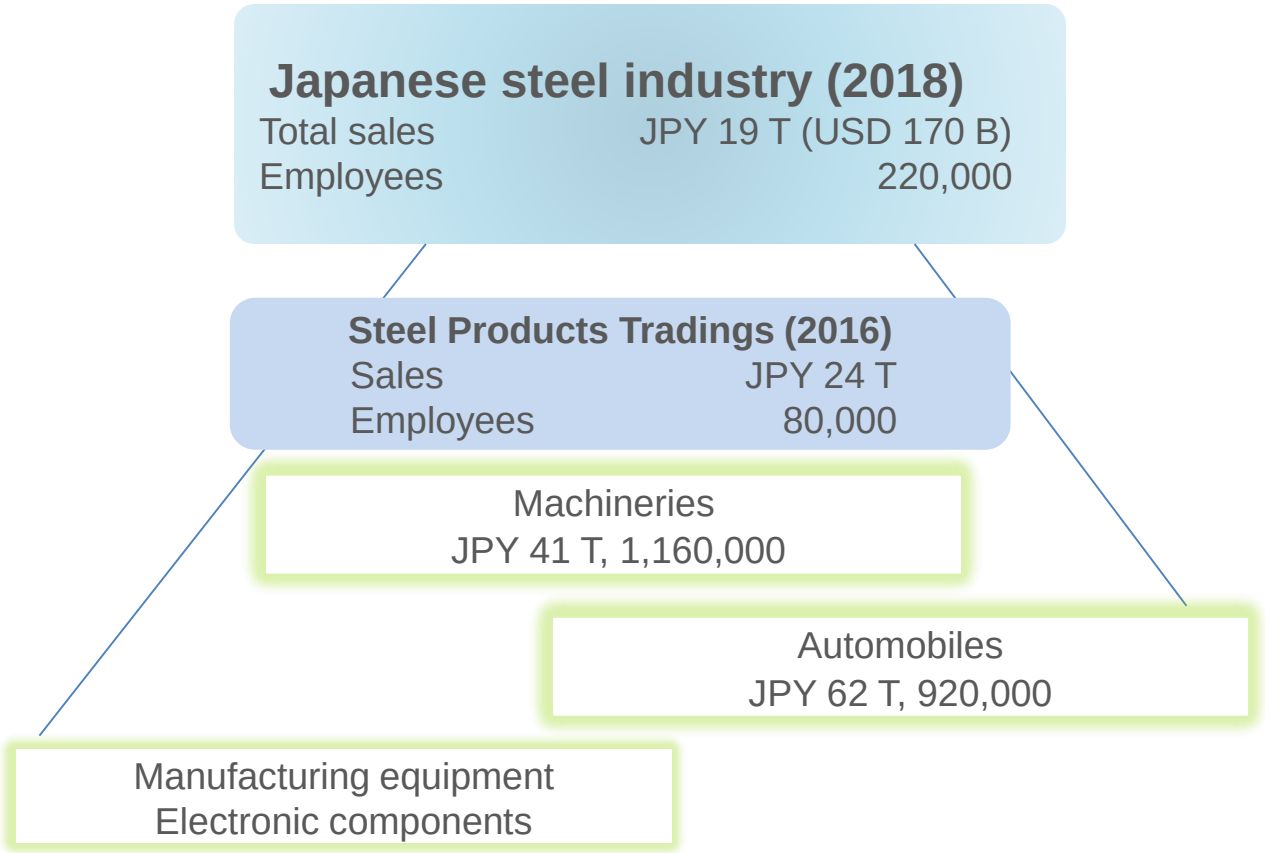
Members

52 iron and steel producers
57 distributers engaged in steel processing and sales
6 organizations

JISF Headquarters, Tokyo

Japanese steel industry outline

Total sales 19 trillion yen (168 bil USD)
Employees 220,000 (2018)
Contributes to industries including machinery, automobiles, metal processing, and electronics.
Exports of 4% of Japan (2019), contributing to the GDP.



Data: Ministry of Economy, Trade and Industry (METI)
a Roadmap for Promoting Transition Finance in the Economy and Industry Sector

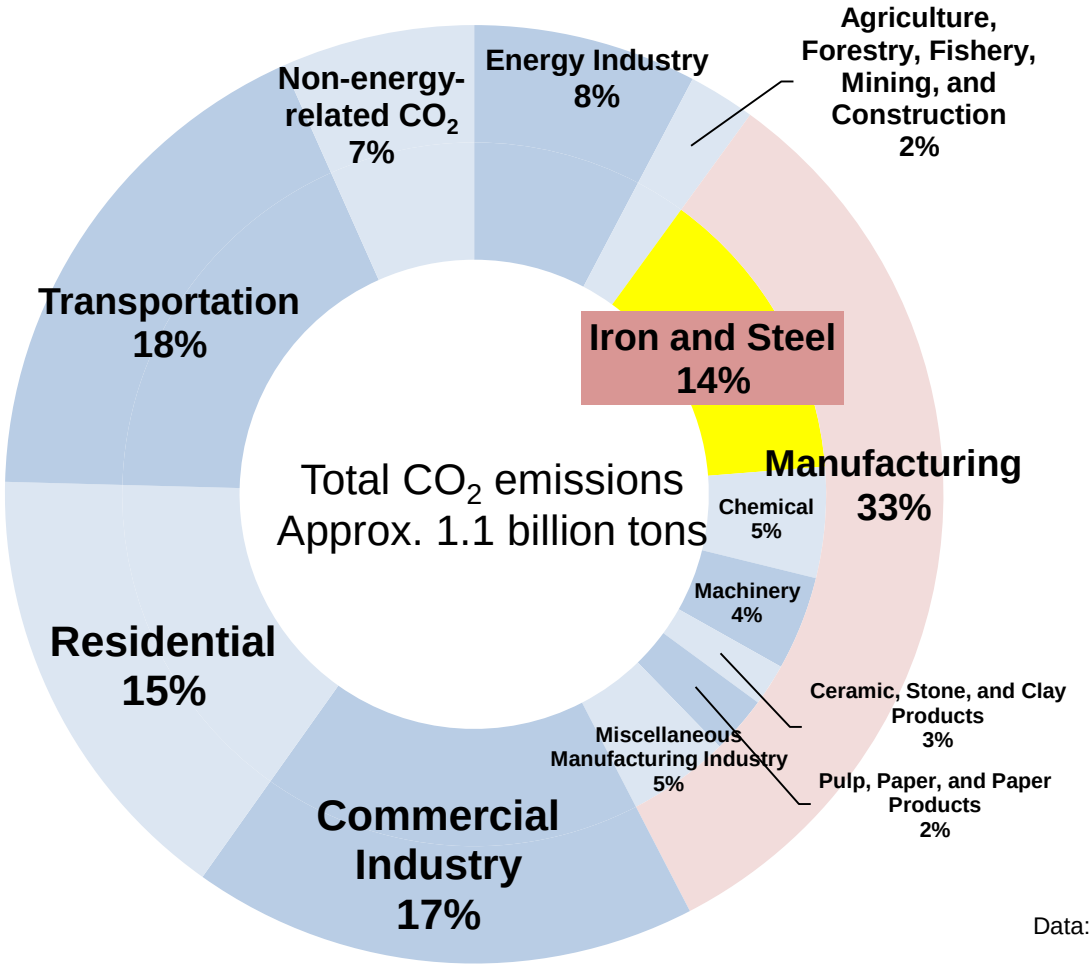
Exports from Japan

Data: Customs Statistics

	Year 1990 41.4 trillion yen		Year 2005 65.6 trillion yen		2019 76.9 trillion yen	
1	Automobile	17.8%	Automobile	15.1%	Automobile	15.6%
2	Business machine	7.2%	Semiconductors, Electronic components	6.7%	Semiconductors, Electronic components	5.2%
3	Semiconductors, Electronic components	4.7%	**Iron and steel**	**4.6%**	Automobile parts	4.7%.
4	Video equipment	4.5%	Automobile parts	4.3%	**Iron and steel**	**4.0%**
5	**Iron and steel**	**4.4%**	Scientific Optics Instruments	3.8%	Motor	3.5%
6	Scientific optics Equipment	4.0%	Motor	3.3%	Semiconductors, Manufacturing equipment	3.2%
7	Automobile parts	3.8%	Organic compound	2.9%	Plastic	3.2%
8	Motor	2.7%	Video equipment	2.7%	Scientific Optics Instruments	2.8%
9	Audio equipment	2.3%	Plastic	2.6%	Organic compound	2.5%
10	Tele communications equipment	2.1%	Electric circuit and other equipment	2.6%	Electric circuit and other equipment	2.4%

CO_2 emissions in Japan in 2019

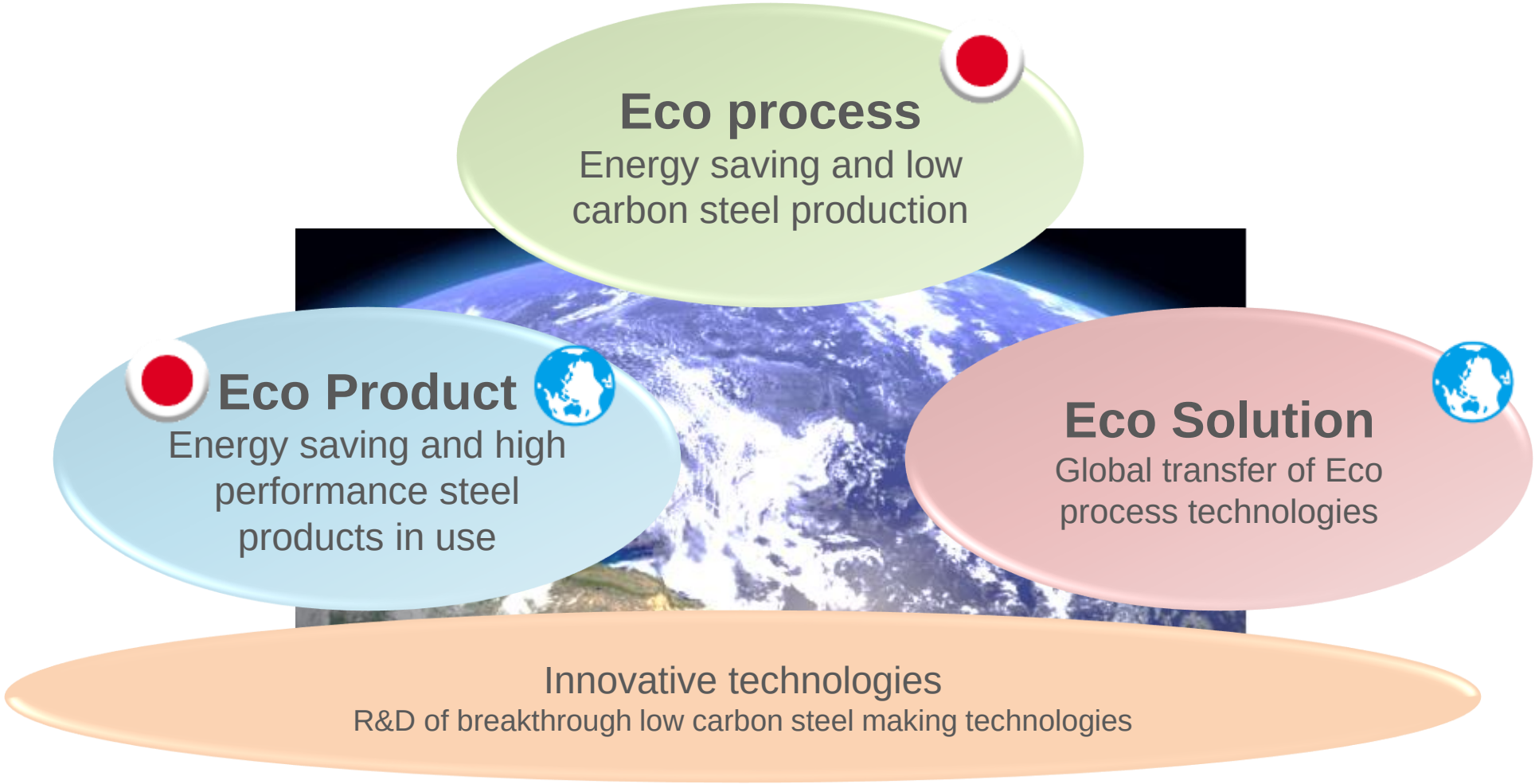
Iron is abundant on the earth, low environmental impact, economical in production and easy in recycling, resulting in wide and various use in society.
As a result, iron and steel industry accounts for 14% of CO_2 emissions in Japan.



Data: Green House Gas Inventory Office of Japan

JISF's activities for climate change

For contribution to low carbon society, Japanese steel industry set up 3 ECOs to address climate change.



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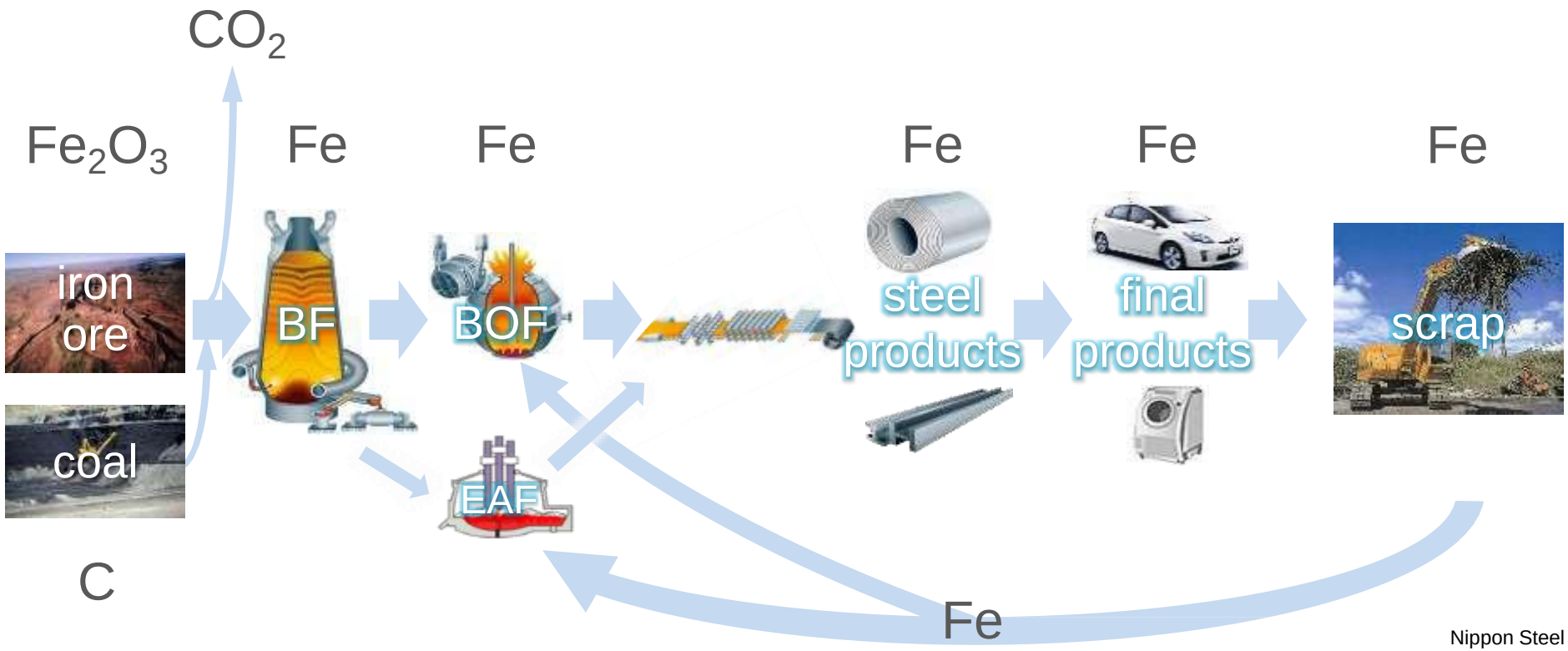
Circulation of steel: production and recycling

Iron ore is reduced with coal to produce steel, emitting CO_2.
Once reduced, steel maintains its property even after recycling.



Nippon Steel Corporation

Life Cycle Assessment

A methodology to assess the product emissions and environmental impact in life cycle total

LCA is a method

to assess the emissions and environmental impacts of a product over its life cycle.

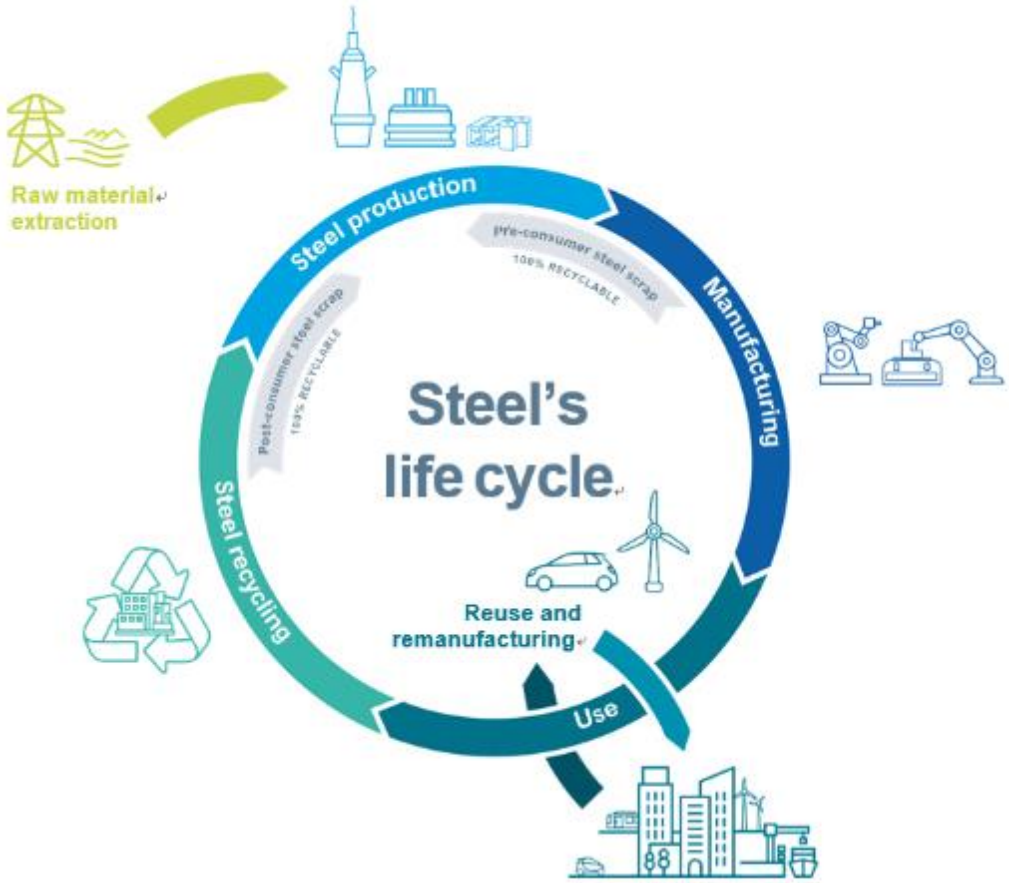
LCA considers

all phases of a product life cycle:
mining of raw materials, transportation,
production, manufacturing,
use, waste disposal, and recycling
of the product.

LCA is used

to avoid shifting the environmental burden
between life cycle phases
from one impact category to another

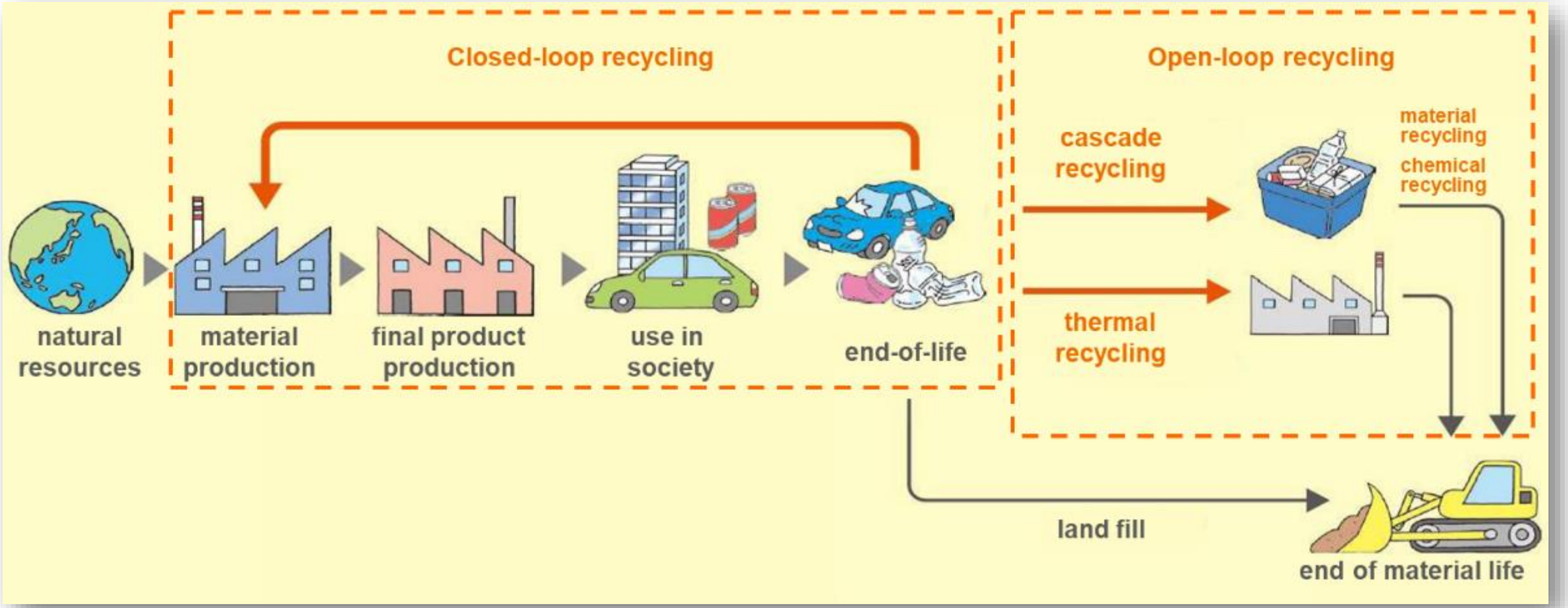
Lifecycle of Steel



worldsteel

Open loop and closed loop recycling

Most of the material is open loop recycling material, degrading its property.
Steel is a closed loop recycling material, fully substitutional to the natural resources.



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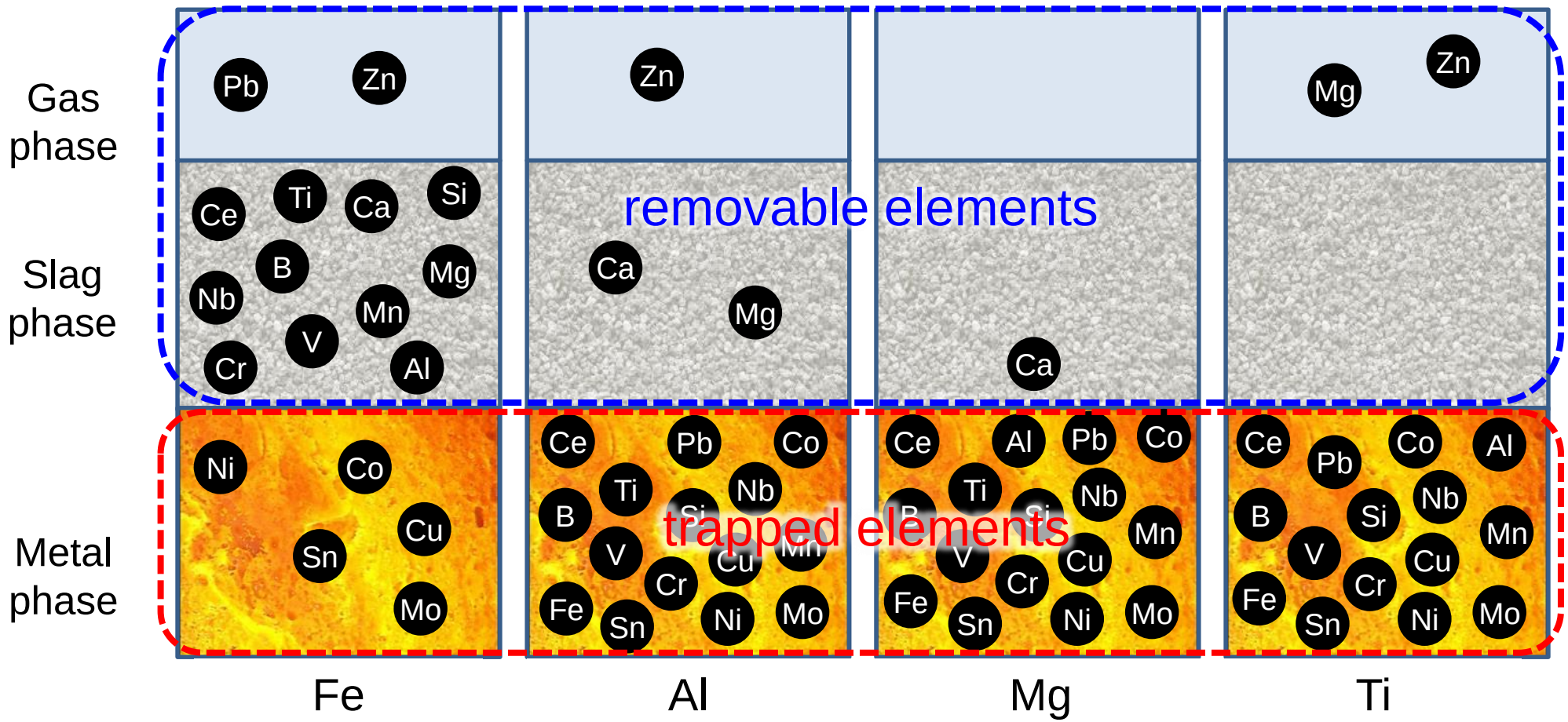
Removal of impurities (alloy elements) in recycling

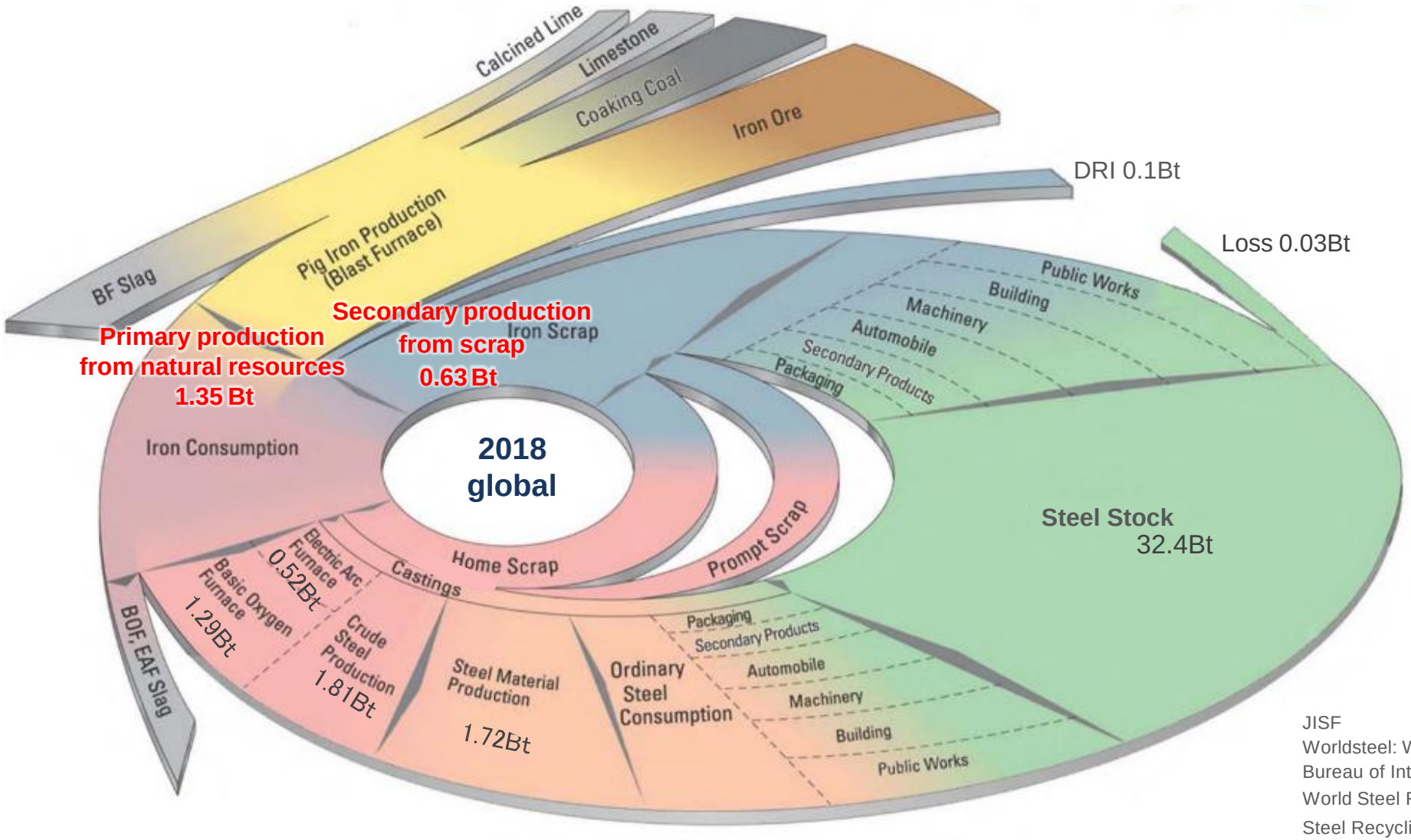
Most impurities in steel can be removed by oxidization since iron is less oxidized than such impurities.
Cupper or nickel can be magnetically separated before remelting of steel scrap.

Hiraki, Xin, Nakajima, Matsubae, Nakamura and Nagasaka (2012)



Circular steel: Steel production and closed loop recycling in the world

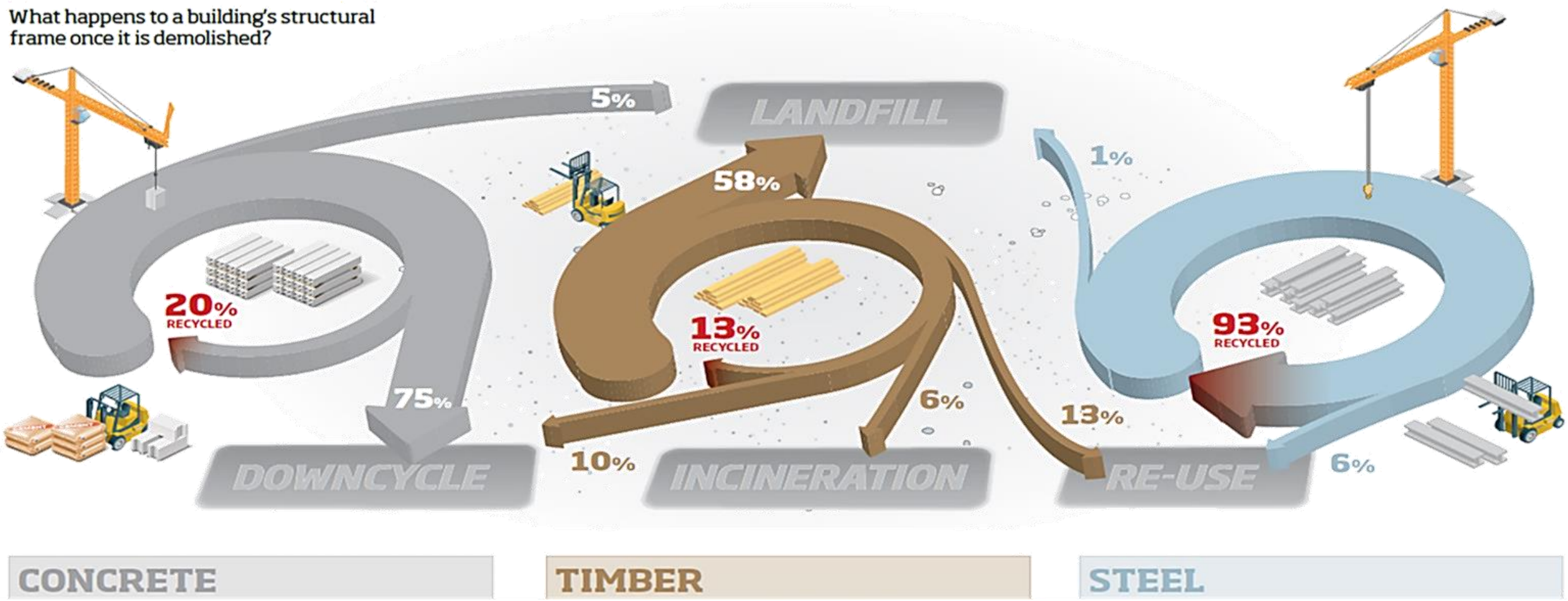
Steel is recycled with no change in the inherent properties of the basic steel material and recognized as closed-loop recycling material.



JISF
Worldsteel: World Steel in Figures 2019
Bureau of International Recycling:
World Steel Recycling in Figures 2014-2018
Steel Recycling Research

End-of-Life Scenarios of building structural frame

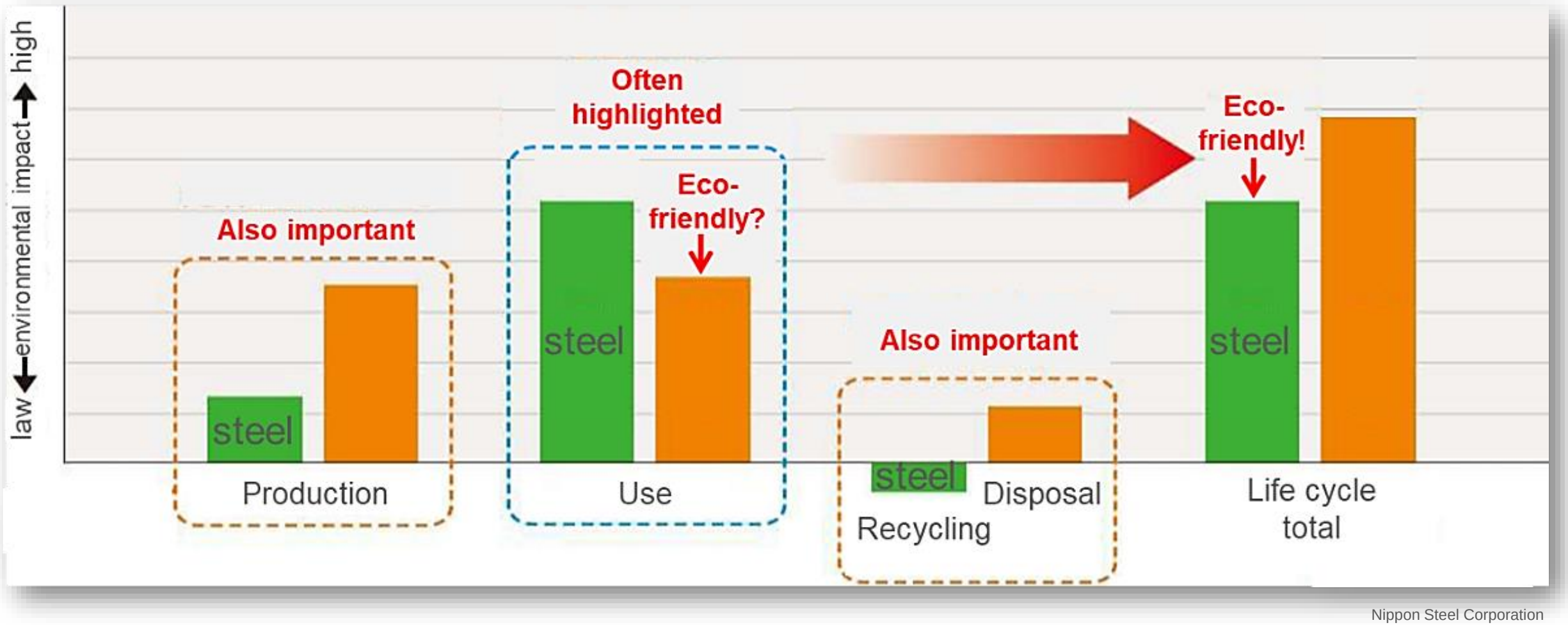
Most of the building material are downcycled or landfilled but steel is recycled.



SteelConstruction.info, https://www.steelconstruction.info/File:B_Fig10_2013.png#filelinks

Life Cycle Thinking

Life cycle thinking is very important. Steel is often the best choice thinking of the whole life cycle.



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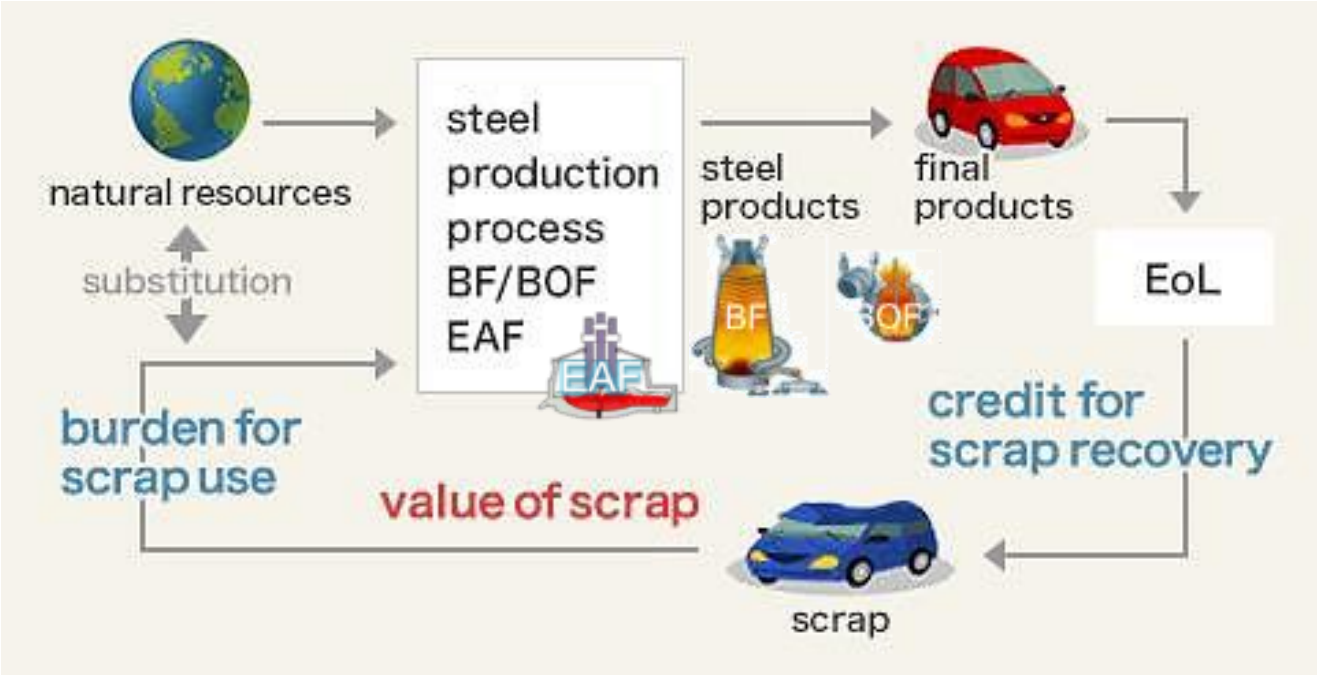
Life Cycle Inventory (LCI) of Steel Product, worldsteel methodology

LCI is the life cycle emissions intensity of a product, the sum of emissions in every phase of life cycle. worldsteel developed a methodology to calculate the closed loop recycling potential of steel products.

Life Cycle of Steel



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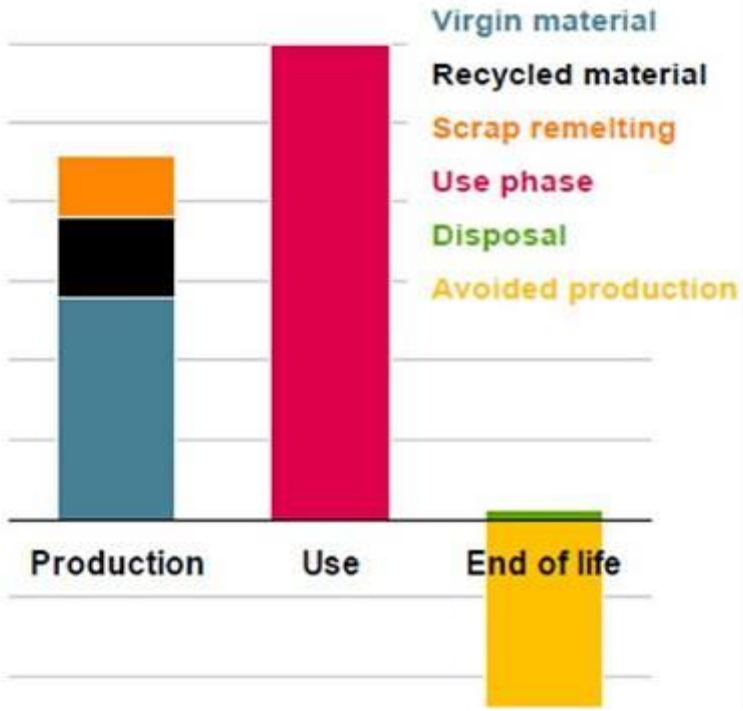
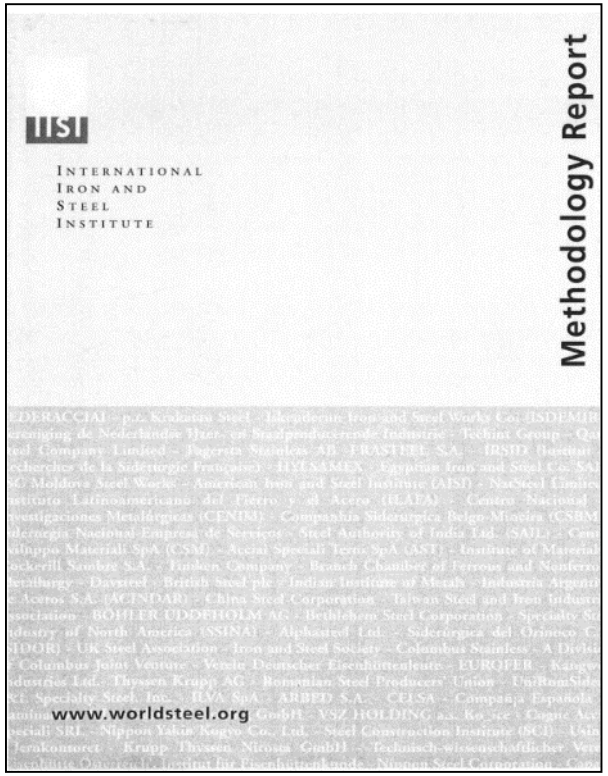
Life cycle inventory (LCI) of a steel product



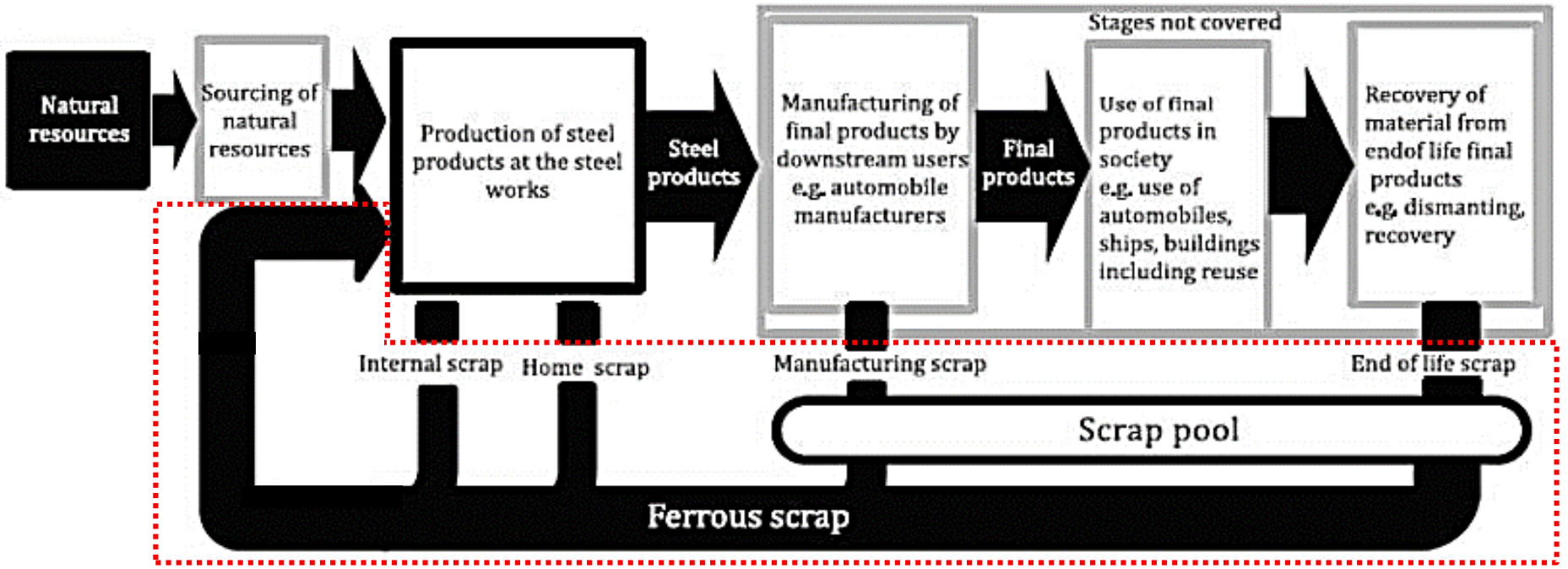
worldsteel

ISO 20915 standard

ISO 20915:2018 standard describes the LCI calculation methodology for steel products including recycling, first in the material products.

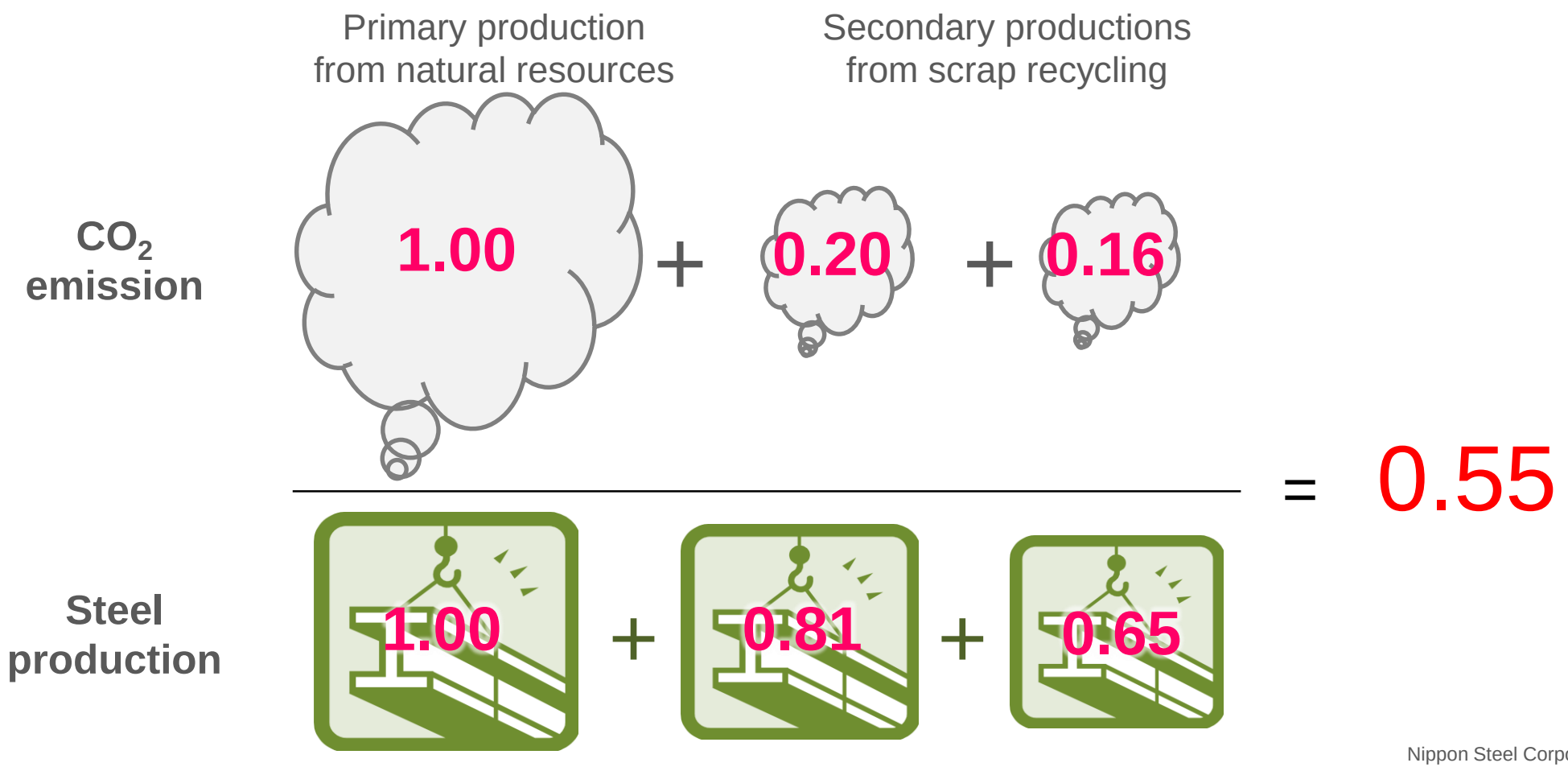


worldsteel



ISO, worldsteel
https://www.iso.org/standard/69447.html

Multiple recycling (e.g. 3rd cycle)



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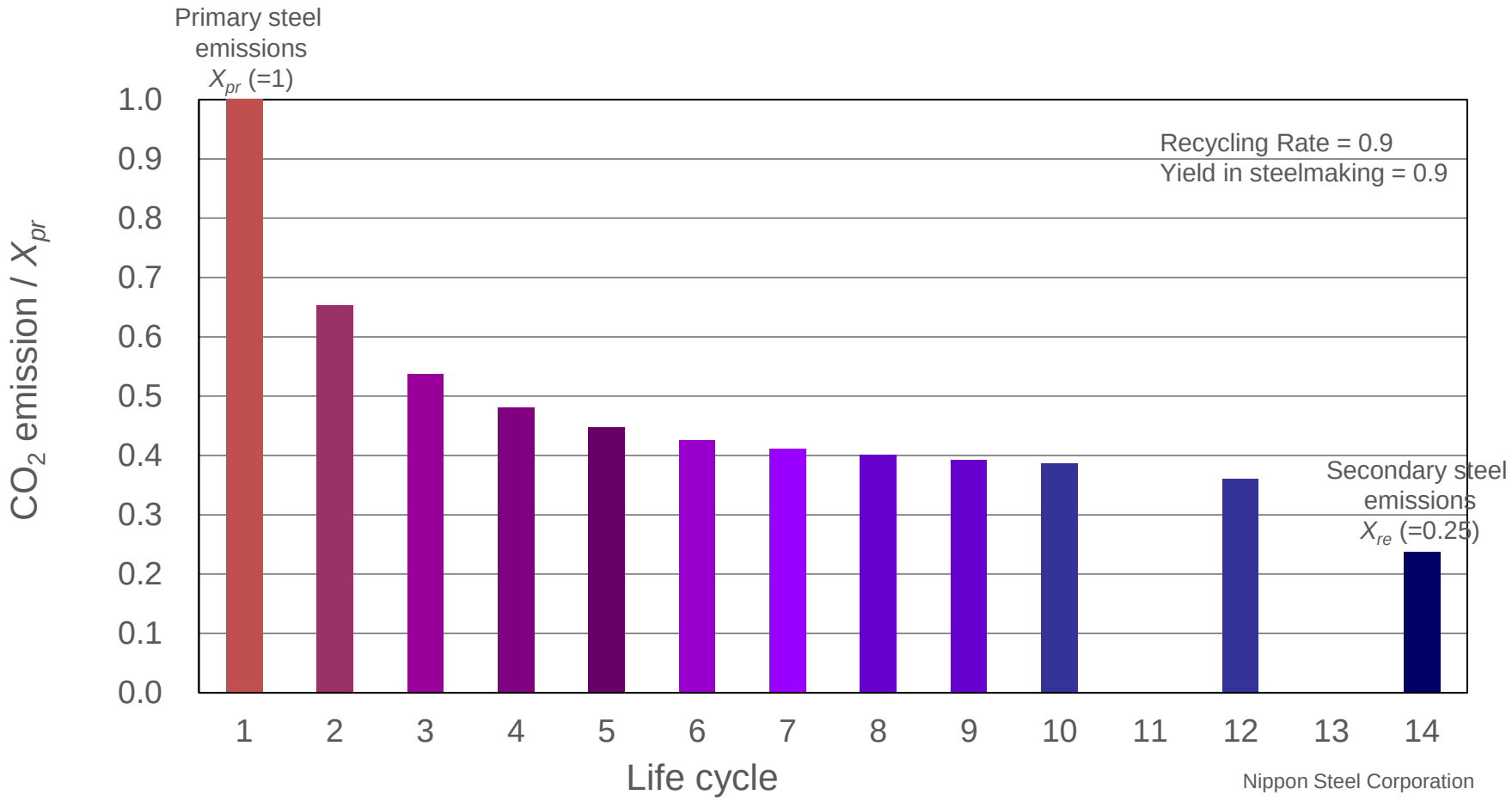
CO_2 emissions =1.0 (primary production), 0.25 (secondary production)
R (scrap recovery rate) = 0.9, Y (recycling yield) = 0.9

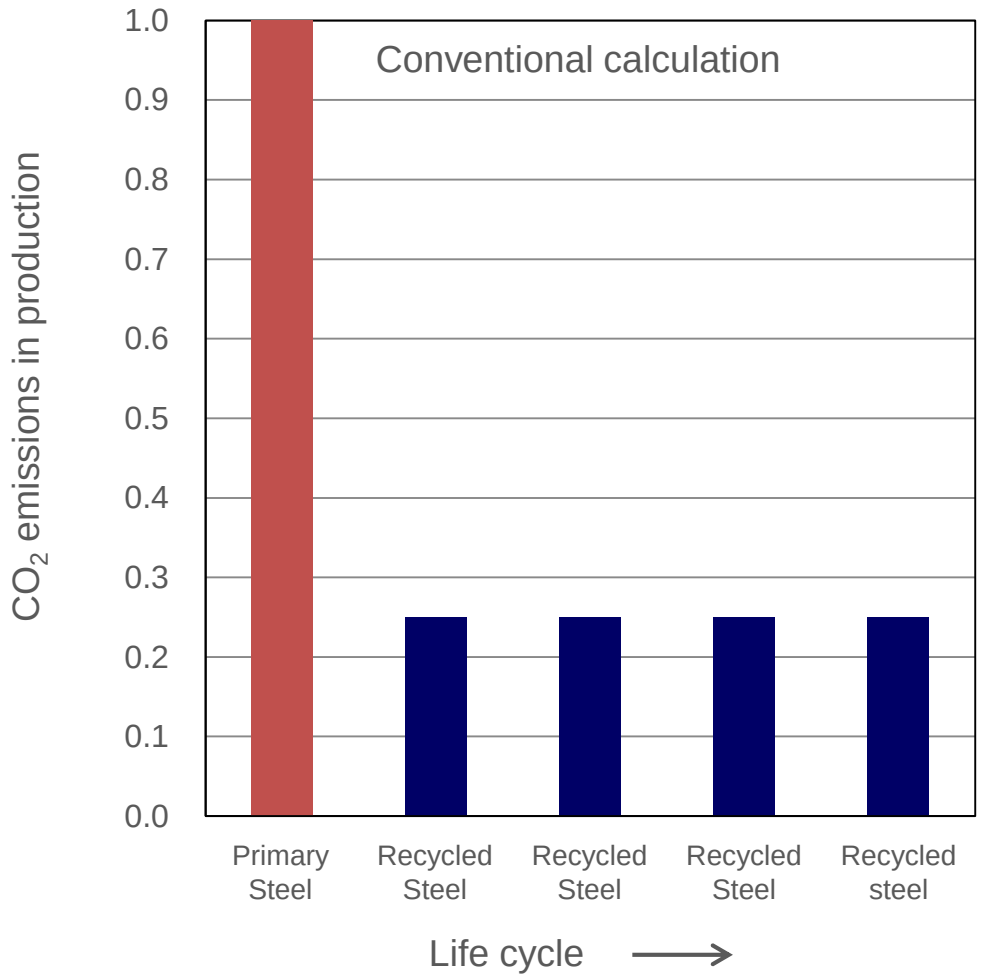
CO_2 emissions in multiple recycling

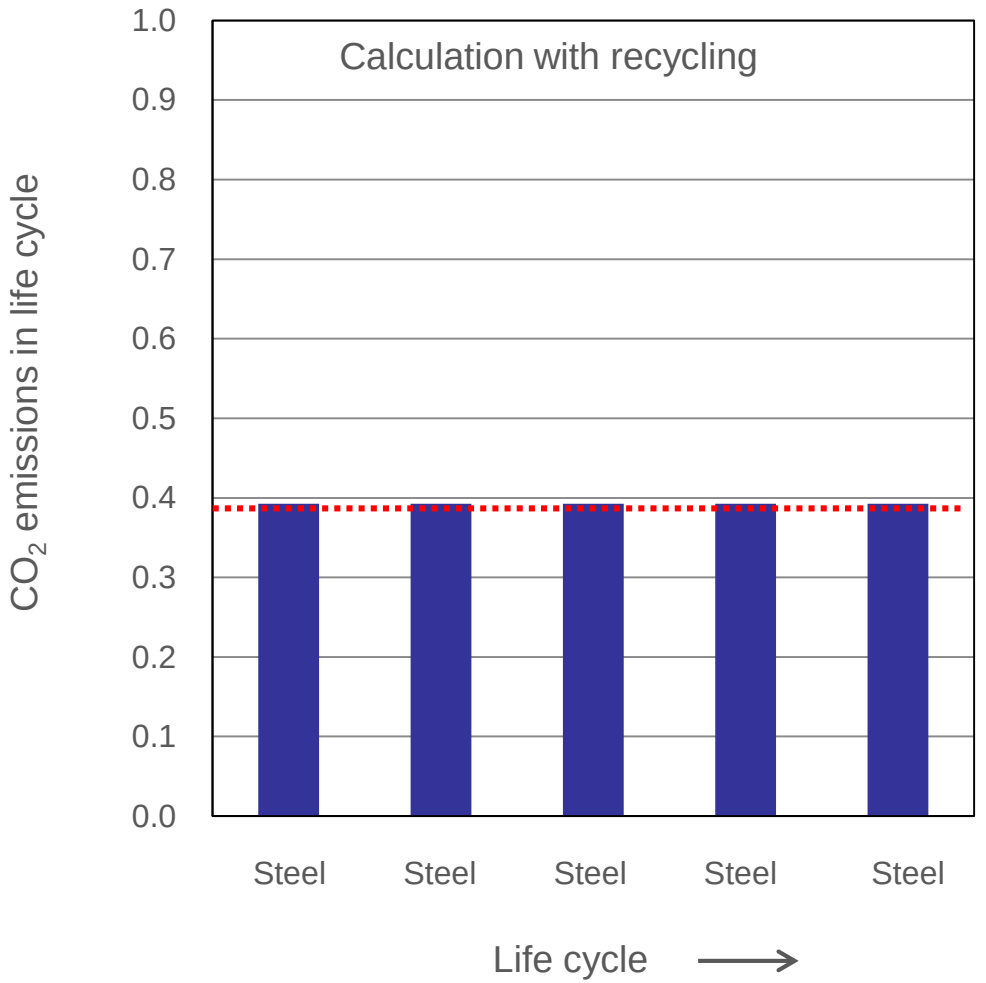
CO_2 emission in life cycle average converges to a value in multiple recycling.



CO_2 emissions in multiple recycling

In closed loop recycling, there is no difference in primary and recycled steel products.





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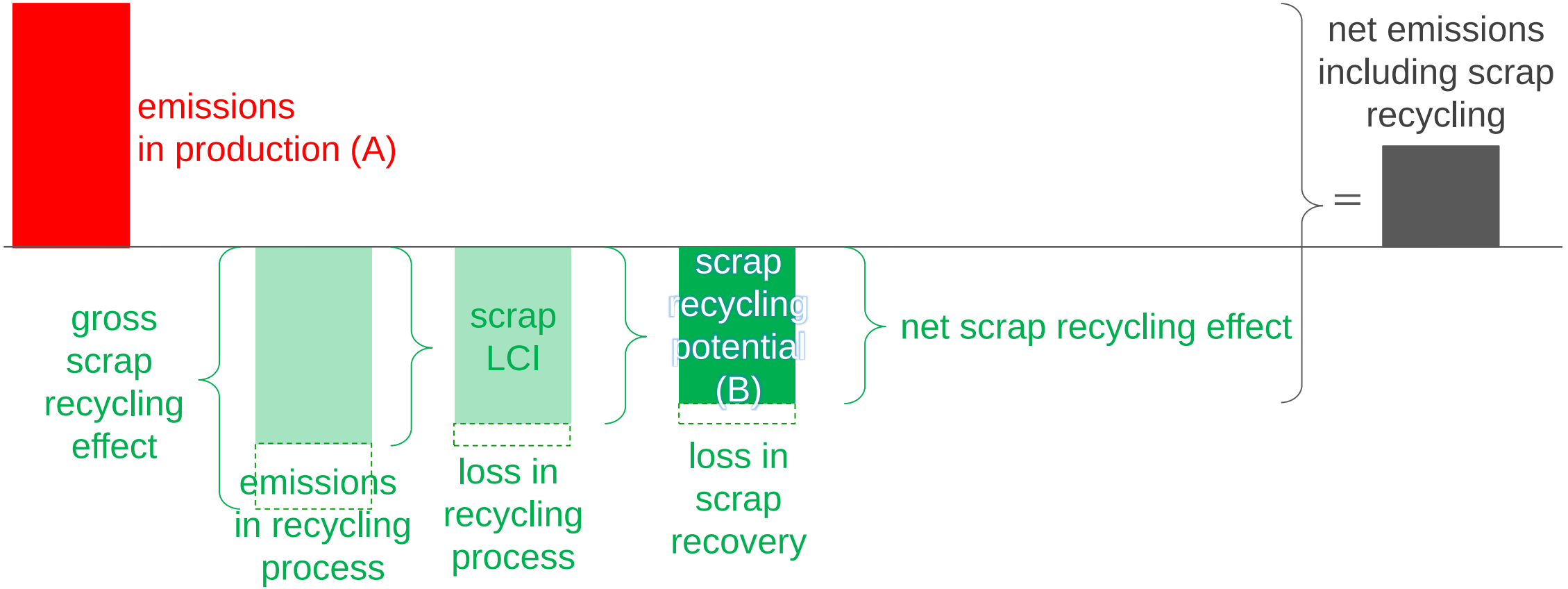
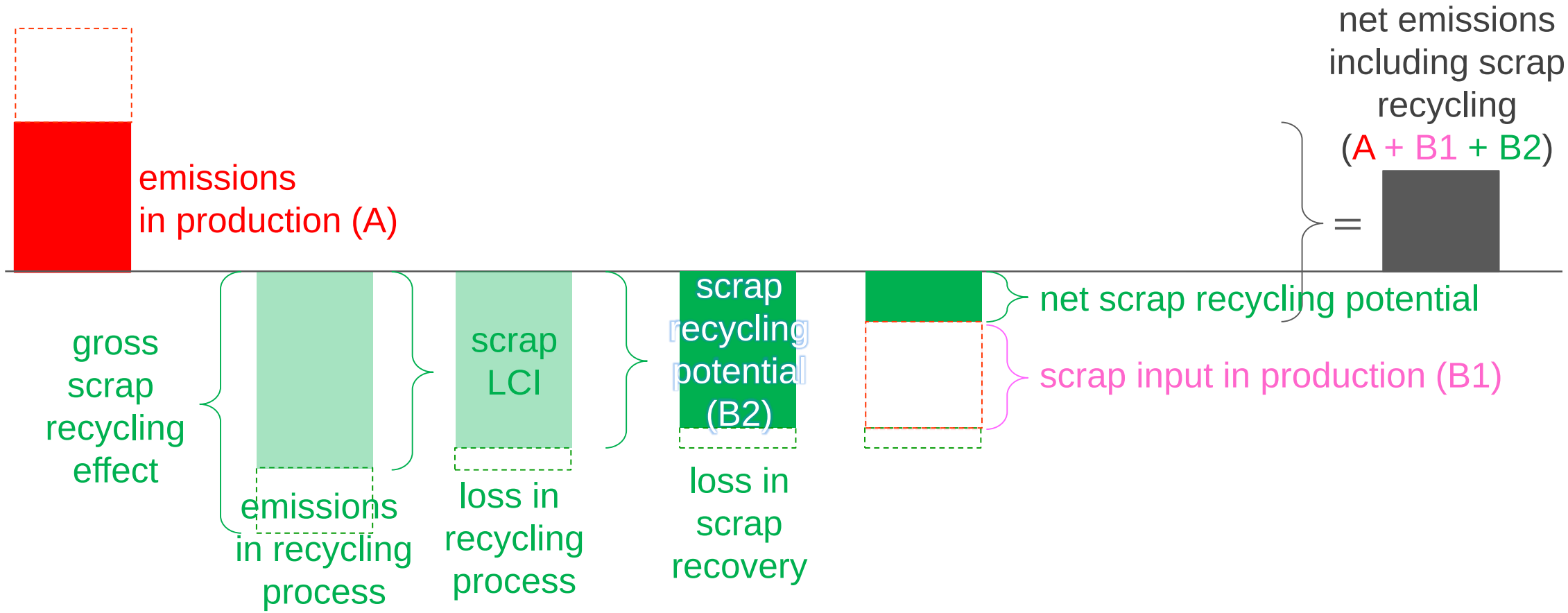
LCI calculation methodology for steel products in ISO 20915 standard

Case of no scrap use



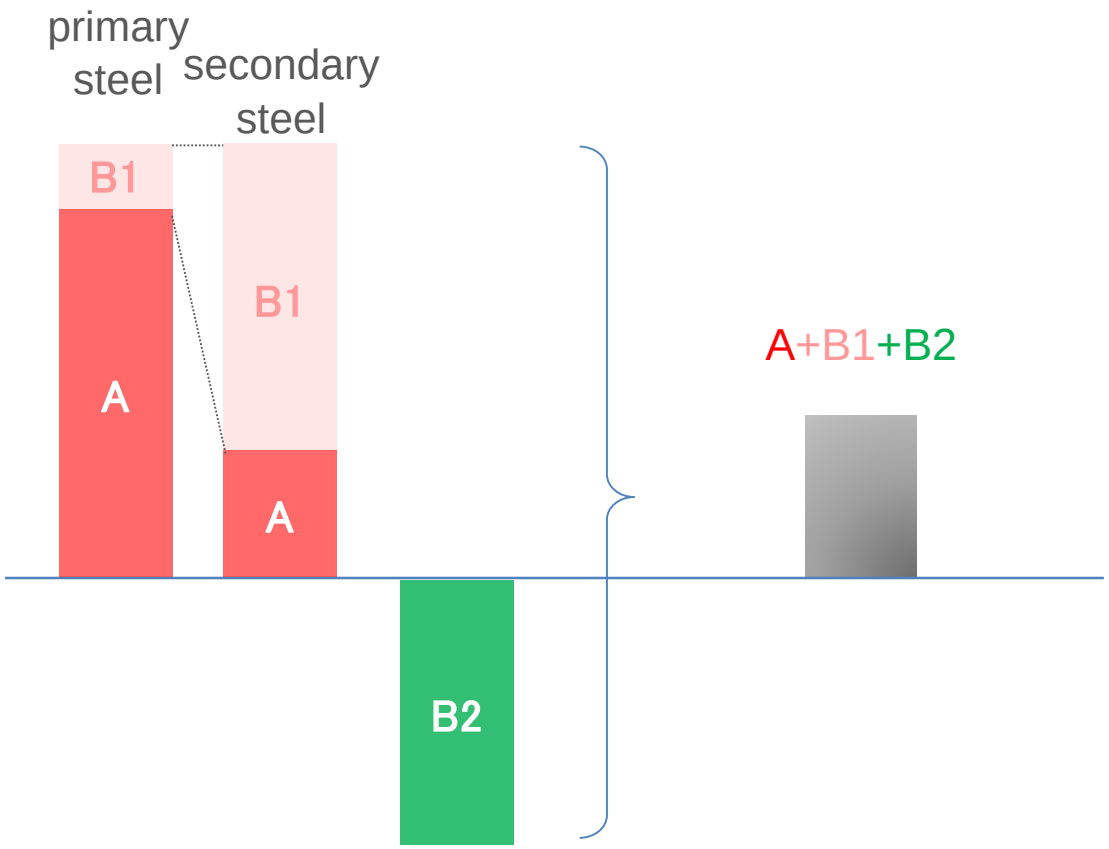
LCI calculation methodology for steel products in ISO 20915 standard

Case of scrap use



LCI calculation methodology for steel products in ISO 20915 standard

LCIs of primary steel and secondary steel are different in production phases
but equal to each other in life cycle including recycling.



JIS Q 20915 Application

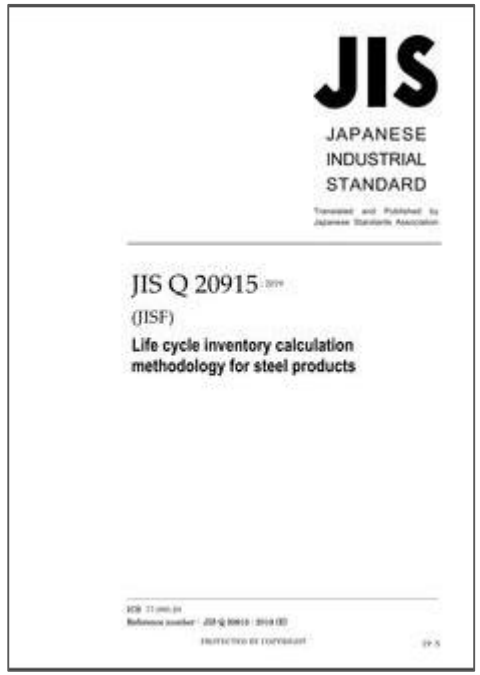
ISO 20915 standard is mirrored to the Japanese Industrial Standard as JIS Q 20915.

Press release by JISF on Jun 2019

- We are pleased to announce that the JIS standard for calculating the life cycle inventory of steel products has been approved and published as JIS Q 20915 in the Official Gazette issued today, June 20 (Thursday). The draft of this standard, prepared by the Japan Iron and Steel Federation, was submitted to the Ministry of Economy, Trade and Industry (METI) in October of last year, and was accepted.

- This standard is an epoch-making JIS standard that specifically shows a method for calculating the lifecycle environmental impact of steel products, taking into account the "effect of recycling" in accordance with the characteristics of closed-loop recycling of steel products (recycling in which steel products are recycled as many times as necessary into various new products). It is positioned as the domestic version of ISO 20915 (Life Cycle Inventory Calculation Methodology for Steel Products)* issued in November last year.

- The Japan Iron and Steel Federation (JISF) has been promoting the message that "Steel is actually light. The JIS standard is a new version of the ISO 20915 (Life Cycle Inventory Calculation Methodology for Steel Products). The new JIS standard provides a method to quantitatively evaluate the environmental performance of a product throughout its life cycle, including recycling. Using this method, it can be shown that the environmental impact of products such as iron, which has excellent recyclability, is low. If this method becomes established as a standard concept for users, including end consumers, to select products, it will be an effective tool to promote a recycling-oriented society.



JISF

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LCI data collection and release of the datasets

According to ISO 20915/JIS Q 20915, the LCI datasets of Japan average are released by JISF.

Datasets of products

No	Product Name	Product Description
1	Hot rolled coil	Steel sheet rolled on a hot-strip mill to a thickness of 1.2 to 25.4mm. Width ranges from 600mm to 2,300mm.
2	Pickled hot rolled coil	Hot-rolled steel from which the iron oxides present at the surface have been removed in a pickling process.
3	Cold rolled coil	Pickled steel sheet rolled thin at room temperature.
4	Finished cold rolled coil	Produced by annealing process from cold-rolled steel sheet. Crystallization is controlled, and formability is improved.
5	Electrogalvanized steel	Surface-treated steel sheet with superior corrosion resistance by plating the surface with zinc. Obtained by electro plating.
6	Hot-dip galvanized steel	Plated steel sheet manufactured by immersion in hot-dip zinc.
7	Tin-free (ECCS)	Also known as Electrolytic chrome coated steel (ECCS). Obtained by electroplating a thin finished cold-rolled coil with a thin layer of chrome. Good adhesion to paint, film, etc. Used in the same way as tinplate steel sheet.
8	Tinplate	Tin-plated steel sheet. Corrosion-resistant and excellent in workability.
9	Organic coated	Coated steel sheet with added functions such as scratch resistance and stain resistance.
10	Plate	Hot-rolled steel plate with a thickness of 6 mm or more.
11	UO pipe	Large-diameter pipe manufactured by pressing and welding thick plates
12	Welded pipe	Small- to medium-diameter pipes made by forming steel plates into a cylindrical shape and welding them together.
13	Sections	A steel material with a variety of cross-sectional shapes to suit different purposes. Includes H-beams, angle steels, I-beams
14	Steel Bar	Steel in the form of a bar. Steel bars are used as reinforcing bars at construction sites and as structural materials for machinery, ships, etc.
15	Wire rod	Steel material formed into a wire shape by hot rolling with a cross-sectional diameter of about 5 mm to 50 mm.
16	Engineering steel (Tool steel)	Steel that has characteristics such as hardness, strength, tenacity, abrasion resistance, heat resistance, and corrosion resistance by adding alloying elements.

System Boundary in This LCI Study

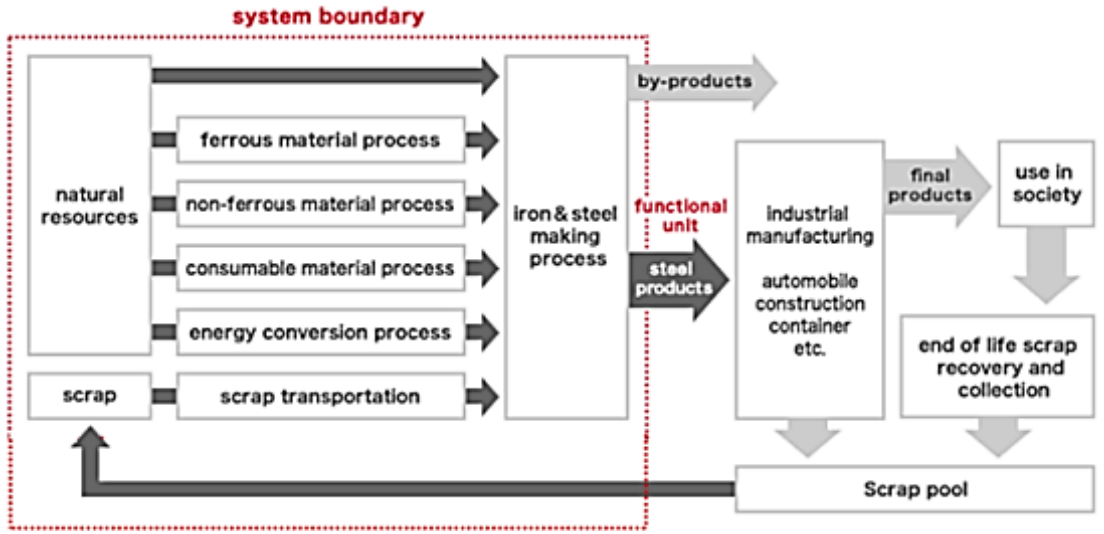
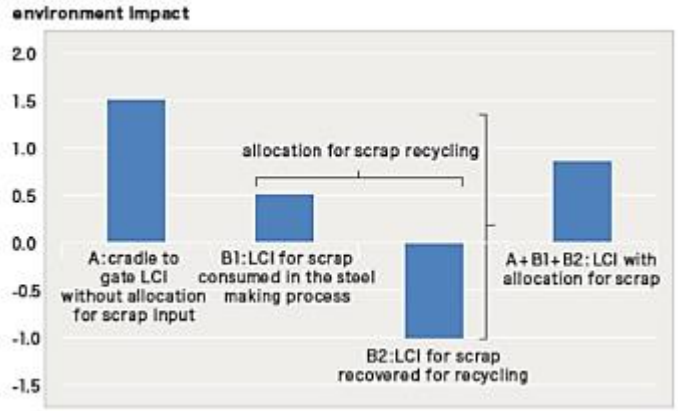


Illustration of LCI of steel products



Data: JISF

Life cycle inventory（CO_2）of steel products (Japan ave.)

Products	Cradle to Gate including recycling	Cradle to Gate	Scrap recycling effect	
			burden for scrap recycling	credit for scrap recycling
	A+B1+B2	A	B1	B2
Hot rolled coil	660	1,917	36	-1,293
Pickled rolled coil	708	1,964	37	-1,293
Cold rolled coil	775	2,030	38	-1,293
Finished cold rolled coil	904	2,160	38	-1,293
Hot dip galva	1,064	2,318	39	-1,293
electrogalva	1,058	2,312	39	-1,293
Tinplate	1,222	2,280	38	-1,293
Organic coated	1,344	2,596	41	-1,293
Tin-free	1,027	2,282	38	-1,293
Plate	857	2,110	40	-1,293
UO pipe	1,051	2,303	41	-1,293
Welded pipe	1,065	2,318	41	-1,293
Section	925	1,618	549	-1,293
Wire & rod	748	2,003	37	-1,293
Rebar	793	1,541	505	-1,293
Special steel	1,222	1,798	717	-1,293

kg-CO_2/kg-product

Fiscal 2018, Japan

Japan Iron and Steel Federation

Aichi Steel
Itoh Iron & Steel
Osaka Steel
Kyoei Steel
Godo Steel
Kobe Steel
Sanyo Special Steel
JFE Bars & Shapes
JFE Steel
Shimizu Steel
Nippon Steel
Daido Steel
Tokyo Kohtetsu
Tokyo Tekko
Topy Industries
Nissin Steel

site: 26

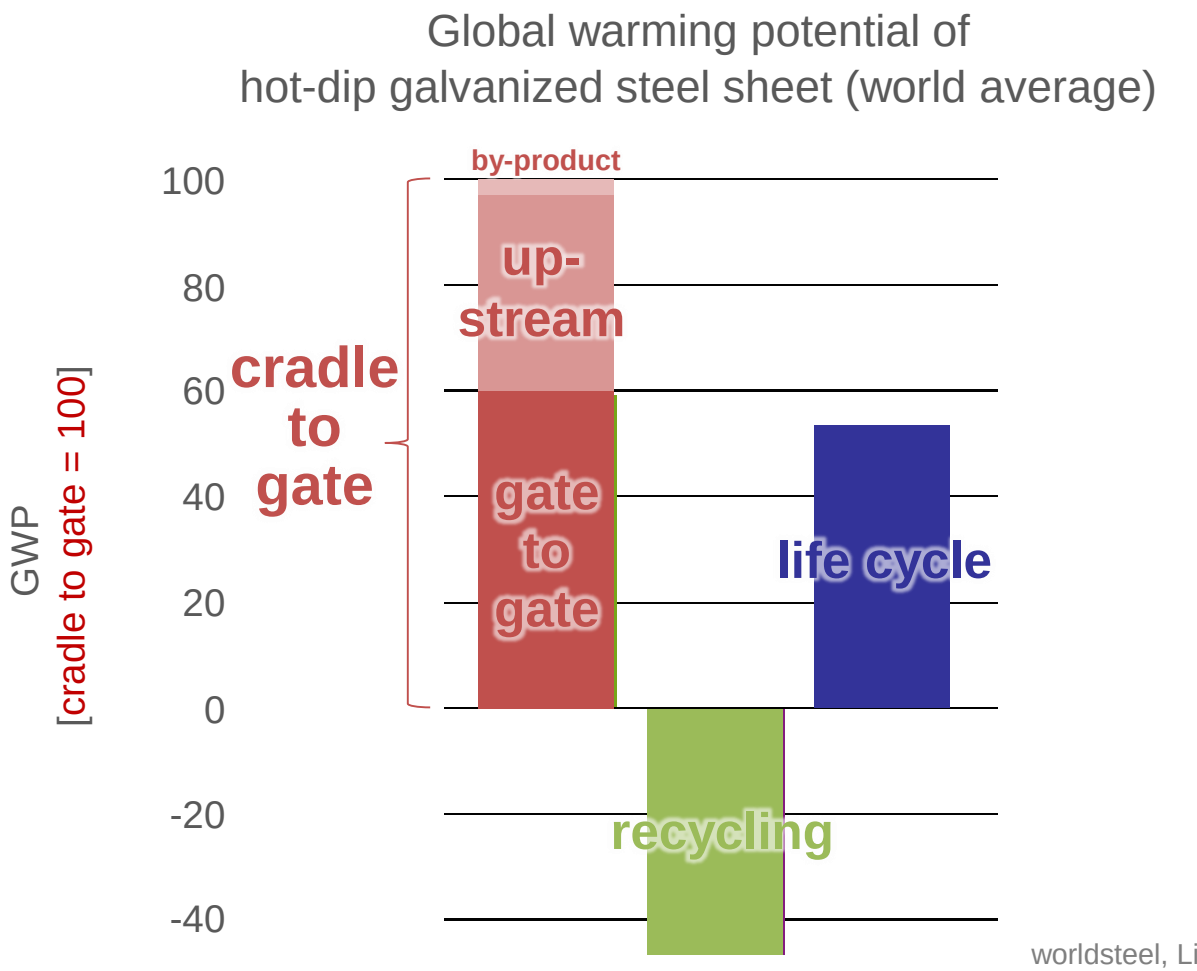
process: 169

Product: 16

recovery rate ＝93.1%

GWP of steel product including recycling

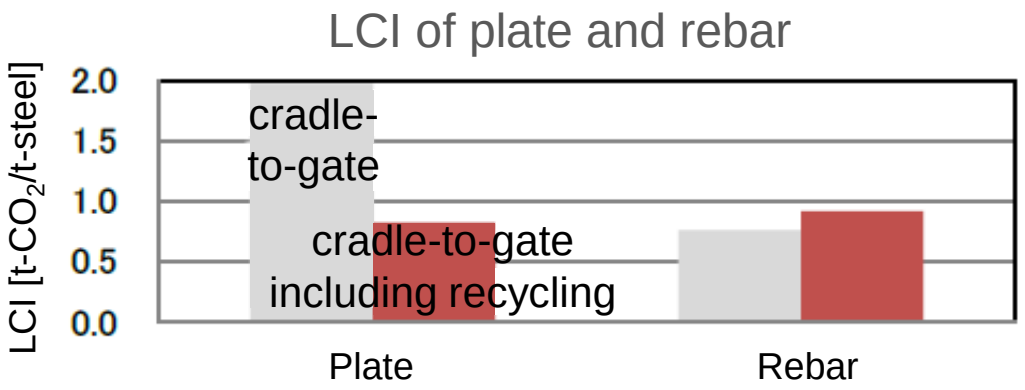
GWP of steel product including recycling is far less than those without recycling.



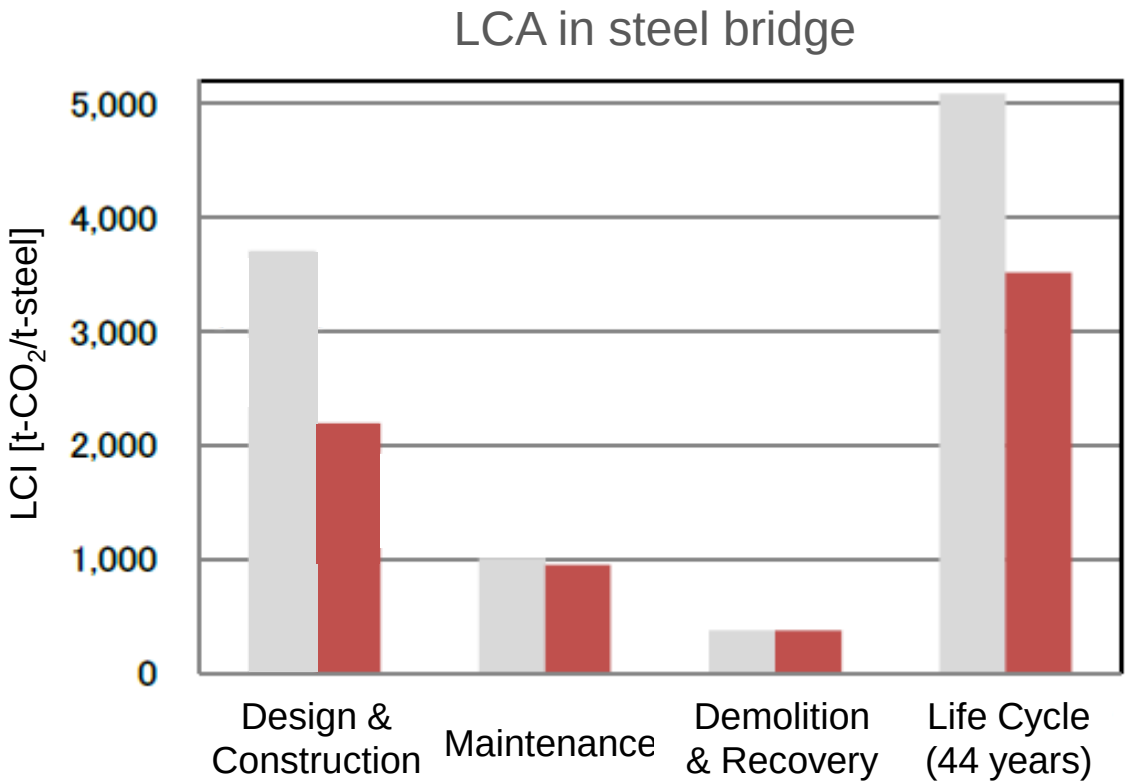
worldsteel, Life cycle inventory study, May 2018, P23

LCA in steel and reinforced concrete bridges

LCI and LCA decreases including recycling in steel bridge using plate (mainly BF steel).



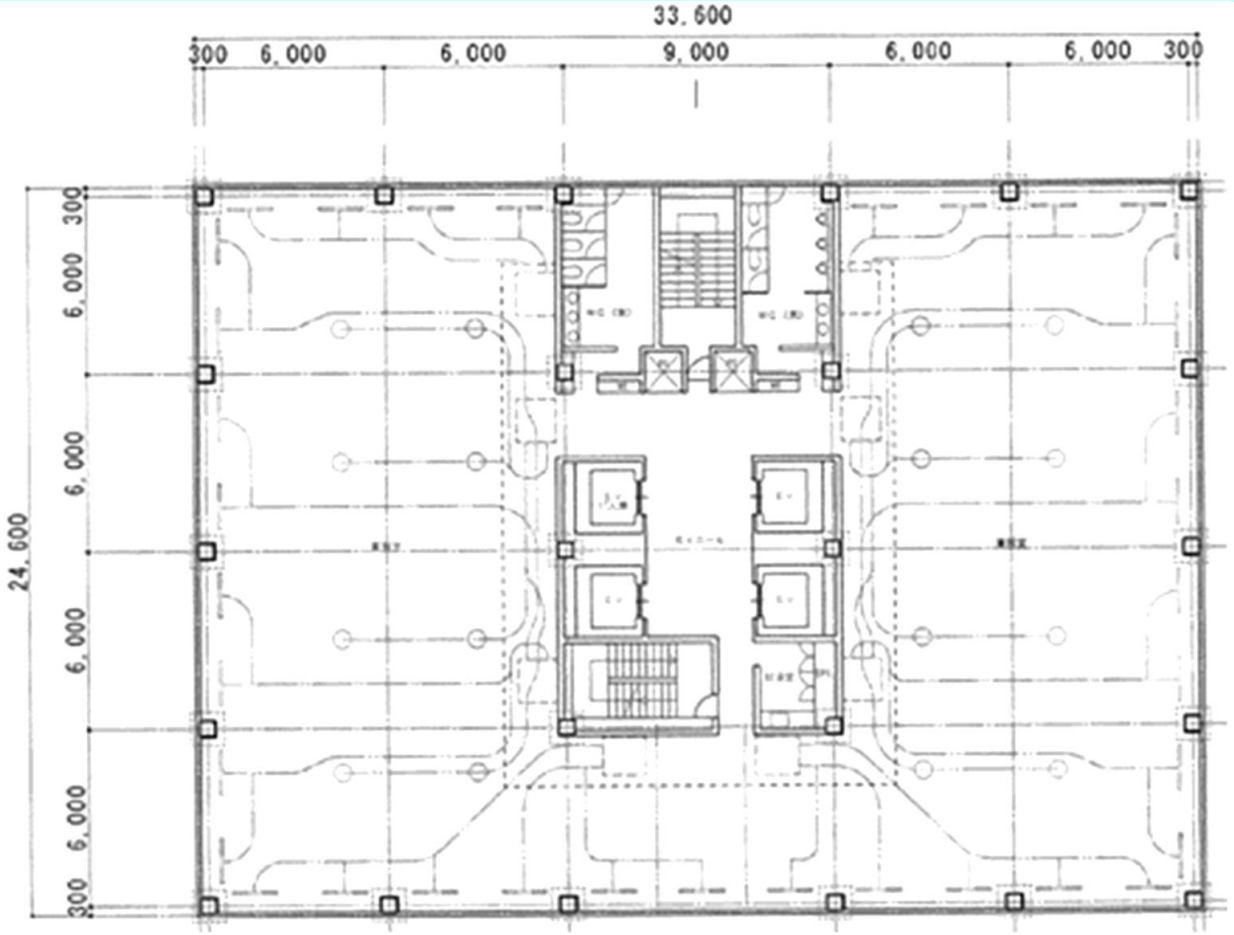
日本鋼構造協会: 建設分野における鋼構造物のLCA検討, (2014), 9



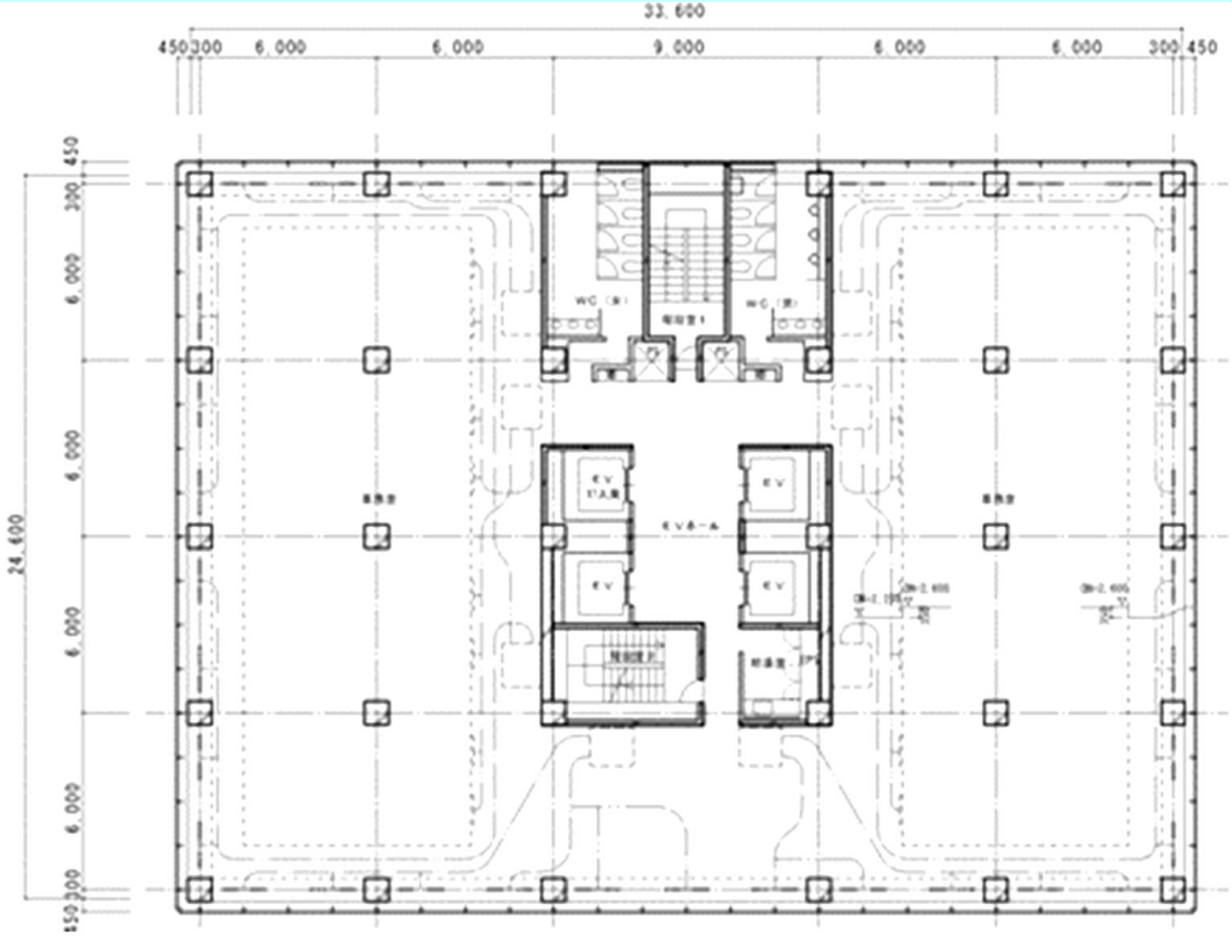
日本鉄鋼連盟　建設環境研究会: 鉄鋼製品のリサイクリング効果を考慮したLCA手法及びシミュレーション事例の紹介

LCA of buildings

Office building designs of steel and reinforced concrete structures are compared including or not including recycling.



Steel structure building



Reinforced concrete structure building

出典：日本鉄鋼連盟建設環境研究会報告書
「鋼構造建築物のLCA試算に向けた検討」2017.3

LCA of buildings

Office building designs of steel (S) and reinforced concrete (RC) structures are compared including or not including recycling. RC/S is 1.24 for C to G, and 1.26 for C to G including recycling.

CO_2 emissions
(cradle-to-gate)

分類	No.	材料	原単位	S造		RC造	
			(kg-CO2/kg)	①(kg)	②(kg-CO2)	③(kg)	④(kg-CO2)
コンクリート	1	普通コンクリート(セメント+骨材)*	0.13	3,827,380	499,223	8,947,090	1,167,012
鋼材	2	棒鋼(鉄筋)	1.54	130,330	200,839	651,260	1,003,592
	3	線材(ボルト)	2.00	27,709	55,501	0	0
	4	線材(仕上用)	2.00	2,349	4,705	1,782	3,569
	5	形鋼(躯体)	1.62	479,189	775,328	0	0
	6	形鋼(仕上用)	1.62	2,104	3,404	2,104	3,404
	7	鋼管(躯体)	2.30	225,287	518,836	0	0
	8	鋼管(回転圧入杭64m)	2.30	446,900	1,029,211	1,031,200	2,374,854
	9	鋼板(躯体)	2.11	169,870	358,426	0	0
	10	鋼板(普通型枠)	2.11	32,194	67,929	260,775	550,235
	11	鋼板(鉄骨階段)	2.11	40,275	84,980	0	0
	12	鋼板(デッキプレート)	2.32	80,083	185,632	0	0
	13	鋼板(仕上用、手摺、吊材)	2.32	52,471	121,628	53,414	123,814
	14	めっき鋼板(LGS,他)	2.32	35,372	82,063	17,471	40,533
その他	15	グラスウール(100t)	2.77	4,288	11,878	4,270	11,828
	16	ガラス繊維	2.77	2,853	7,903	2,841	7,870
	17	アスファルト	0.12	105,870	12,704	105,870	12,704
	18	大型タイル	2.19	26,013	56,968	25,235	55,265
	19	接着剤	2.33	0	0	176	410
	20	ロックウール	0.36	102,845	37,024	0	0
	21	石綿吸音板(15t)	0.36	35,398	12,743	36,607	13,179
	22	アルミ部材	9.37	39,724	372,214	39,580	370,865
	23	タイルカーペット	2.30	40,109	92,251	40,370	92,851
	24	スタイロフォーム(30t)	3.25	797	2,590	797	2,590
	25	PB	0.36	135,929	48,934	48,987	17,635
	26	ALC用石灰石	0.02	2,448	49	1,857	37
	27	ポルトランド	0.32	436,402	139,649	435,119	139,238
	28	セメント(モルタル用)	0.75	66,546	49,910	54,616	40,962
	29	セメント(ALC用)	0.75	2,448	1,836	1,857	1,393
	30	ケイ酸カルシウム(土石製品)	0.36	22,927	8,254	22,834	8,220
	31	ガラス板(カーテンウォール)	6.20	15,751	97,577	15,688	97,187
		総量		**6,591,861**	**4,940,190**	**11,801,800**	**6,139,246**
		比(RC造/S造)		**1.00**	**1.00**	**1.79**	**1.24**

CO_2 emissions
(cradle-to-gate including recycling)

分類	No.	材料	原単位	S造		RC造	
			(kg-CO2/kg)	①(kg)	②(kg-CO2)	③(kg)	④(kg-CO2)
コンクリート	1	普通コンクリート(セメント+骨材)*	0.13	3,827,380	478,423	8,947,090	1,118,386
鋼材	2	棒鋼(鉄筋)	0.75	130,330	98,138	651,260	490,399
	3	線材(ボルト)	0.75	27,709	20,726	0	0
	4	線材(仕上用)	0.75	2,349	1,757	1,782	1,333
	5	形鋼(躯体)	0.87	479,189	418,811	0	0
	6	形鋼(仕上用)	0.87	2,104	1,839	2,104	1,839
	7	鋼管(躯体)	1.05	225,287	236,777	0	0
	8	鋼管(回転圧入杭64m)	1.05	446,900	469,692	1,031,200	1,083,791
	9	鋼板(躯体)	0.86	169,870	145,579	0	0
	10	鋼板(普通型枠)	0.86	32,194	27,590	260,775	223,484
	11	鋼板(鉄骨階段)	0.86	40,275	34,516	0	0
	12	鋼板(デッキプレート)	1.06	80,083	85,208	0	0
	13	鋼板(仕上用、手摺、吊材)	1.06	52,471	55,829	53,414	56,832
	14	めっき鋼板(LGS,他)	1.06	35,372	37,636	17,471	18,589
その他	15	グラスウール(100t)	2.77	4,288	11,878	4,270	11,828
	16	ガラス繊維	2.77	2,853	7,903	2,841	7,870
	17	アスファルト	0.12	105,870	12,704	105,870	12,704
	18	大型タイル	2.19	26,013	56,968	25,235	55,265
	19	接着剤	2.33	0	0	176	410
	20	ロックウール	0.36	102,845	37,024	0	0
	21	石綿吸音板(15t)	0.36	35,398	12,743	36,607	13,179
	22	アルミ部材	9.37	39,724	372,214	39,580	370,865
	23	タイルカーペット	2.30	40,109	92,251	40,370	92,851
	24	スタイロフォーム(30t)	3.25	797	2,590	797	2,590
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	28	セメント(モルタル用)	0.75	66,546	49,910	54,616	40,962
	29	セメント(ALC用)	0.75	2,448	1,836	1,857	1,393
	30	ケイ酸カルシウム(土石製品)	0.36	22,927	8,254	22,834	8,220
	31	ガラス板(カーテンウォール)	6.20	15,751	97,577	15,688	97,187
		総量		**6,591,861**	**3,065,005**	**11,801,800**	**3,866,888**
		比(RC造/S造)		**1.00**	**1.00**	**1.79**	**1.26**

出典：日本鉄鋼連盟建設環境研究会報告書
「鋼構造建築物のLCA試算に向けた検討」2017.3

1. Overview of JISF and the three "Eco" activities
2. Lifecycle of steel products
3. ISO 20915 and JIS Q 20915 standards
4. LCI data collection and dataset release
5. Product Category Rule and Ecoleaf EPD for steel products
6. LCA promotion by JISF

EPD Product Category Rules for Steel Products

JISF developed the Product Category Rules (PCRs) for all the steel products for EPD ("Ecoleaf") program to promote the understanding and use of the LCI of steel products including recycling.

Press release by JISF on Aug 2019 (abstract)

エコリーフ環境ラベルプログラム
EcoLeaf Environmental Labeling Program

The Japan Iron and Steel Federation (JISF) has formulated the Product Category Rule (PCR) for all steel products except stainless steel in order to comply with the EcoLeaf environmental labeling program of the Japan Environmental Management Association for Industry (JEMAI). The PCR was approved by the Association on August 13. The PCR formulated this time conforms to the ISO 20915 standard and JIS Q 20915, and in the future, when acquiring EcoLeaf certification for steel products, it will be required to quantify and disclose the environmental impact of steel products, reflecting recycling effects.

・・・

In Japan, the Japan Environmental Management Association for Industry (JEMAI) has been operating EcoLeaf since 2002. In order to obtain EPDs, including EcoLeaf, it is necessary to calculate each product type and formulate product category rules (PCRs), which are the basic rules for declaration. For steel products, PCRs for the relevant products were formulated in 2018 in conjunction with the EcoLeaf application for screw joint rebar.

Now that the ISO 20915 standard was issued in November 2018 and JIS Q 20915 was issued in June 2019, there is an increasing need to calculate the environmental impact of all steel products based on these standards in a way that takes recycling into account. In response to the growing need to calculate the environmental impact of all steel products in a way that takes recycling into account, the JISF has been working to develop a PCR for all steel products in EcoLeaf. After submitting a PCR formulation proposal in April 2019, the PCR-Working Group prepared and submitted a draft, which was approved in August and released to the public after public comments and an expert review. The four PCRs formulated this time cover steel products and secondary processed steel products for construction and non-construction use, respectively.

JISF
https://www.jisf.or.jp/news/topics/190822.html

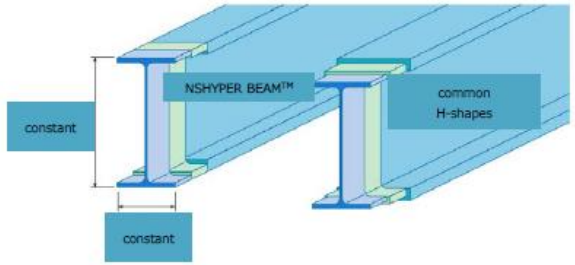
Ecoleaf EPDs are certified conforming to ISO 20915 standard

EcoLeaf
Type III Environmental Declaration (EPD)
Registration number : JR-AJ-19003E-A

EcoLeaf Environmental Labeling Program
Sustainable Management Promotion Organization
2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan
https://ecoleaf-label.jp

NIPPON STEEL | NIPPON STEEL CORPORATION

NSHYPER BEAM™



Functional unit

1 t

System boundary

☐ final products ■intermediate products

Production Stage and optional supplementary infomation

Main specifications of the product

Production sites : Kashima and Wakayama Works
Main standards :
SN400A,SN400B,SN490B,SM400A,SM400B,SM490A,SM490B,
SM490YA,SM490YB,SS400,NSYP345B
Type : H-shape
Main sizes(unit:㎜,t:thickness)
H400(t 9) × B200(t12)~H1,200(t22) × B500(t40)

Company Information

NIPPON STEEL CORPORATION
https://www.nipponsteel.com/en/product/construction/

Registration#	JR-AJ-19003E-A
PCR number	PA-180000-AJ-02
PCR name	Steel products for construction
Publication date	12/6/2019
Verification date	11/29/2019
Verification method	Product-by-product
Verification#	JV-AJ-19003
Expiration date	11/28/2024
PCR review was conducted by:	
Approval date	8/13/2019
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Katsuyuki Nakano

Independent verification of data & declaration in accordance with ISO14025 and ISO21930.

☐internal ■external

*Auditor's name is stated if system certification has been performed.

Registration number : JR-AJ-19003E-A

EcoLeaf
Type III Environmental Declaration (EPD)
Registration number : JR-AJ-19003E-A

EcoLeaf Environmental Labeling Program
Sustainable Management Promotion Organization
2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan
https://ecoleaf-label.jp

1. Results of life cycle impact assessment (LCIA)

Parameter \ Stage	【A1~A3】+【D】	【A1~A3】	Unit
Global warming IPCC2013 GWP100a	870	2000	kg-CO2eq
Acidification	[illegible]	2.2	kg-SO2eq
Photochemical ozone	0.65	0.89	kg-C2H4eq

cradle to gate + recycling

cradle to gate

Parameter \ stage	Unit	Manufacturing Stage total	[A1] Raw material procurement	[A2] Raw material transport	[A3]Manufacturing products		[D] Indirect impact
Global warming IPCC2013 GWP100a	kg-CO_2eq	2.0E+03	6.3E+02	1.2E+02	1.2E+03		-1.1E+03
Ozone layer destruction	kg-CFC-11eq	2.4E-06	1.7E-07	7.9E-10	2.3E-06		-2.0E-07
Acidification	kg-SO_2eq	2.2E+00	5.3E-01	6.7E-02	1.6E+00		-1.7E+00
Photochemical ozone	kg-C_2H_4eq	8.9E-01	4.8E-03	1.0E-03	8.8E+00		-2.4E-01
Eutrophication	kg-PO_4^{3-}eq	4.1E-02	3.7E-05	7.1E-13	4.1E-02		-2.1E-02

SuMPO
Nippon Steel Corporation

Ecoleaf EPDs are certified conforming to ISO 20915 standard

For example, 17 Ecoleaf EPDs are published by Nippon Steel, most of them for construction products ( ).

No	Publication date (y/m/d)	Registration number	Registered product name	Company	PCR number PCR name	Declaration (PDF)	Product category
17	2021/09/13	JR-AJ-21007E	High Tensile Steel Plates for Building Structures : BT-HT™ Series、and Steel Plates for Elasto-plastic Hysteretic-type Dampers for Building Structures : BT-LYP® (The Minister Certified steels for Constructions)	NIPPON STEEL CORPORATION	PA-180000-AJ-03 Steel products for construction	EcoLeaf	
16	2021/09/13	JR-AJ-21006E	Steel Plates for Building Structures	NIPPON STEEL CORPORATION	PA-180000-AJ-03 Steel products for construction	EcoLeaf	
15	2021/07/15	JR-AJ-21005E	Welded light gauge steel H sections SMart BEAM®	NIPPON STEEL CORPORATION	PA-180000-AJ-03 Steel products for construction		
14	2021/05/26	JR-AW-21003E	Seamless OCTG and Linepipe	NIPPON STEEL CORPORATION	PA-180000-AW-02 Steel products (except for construction use)		
13	2021/05/26	JR-AW-21001E	HFW OCTG and Linepipe	NIPPON STEEL CORPORATION	PA-180000-AW-02 Steel products (except for construction use)		
12	2020/10/26	JR-AW-20003E	Electrolytic Tinplate	NIPPON STEEL CORPORATION	PA-180000-AW-02 Steel products (except for construction use)		
11	2020/10/26	JR-AW-20002E	Polymer Laminated TINFREE STEEL	NIPPON STEEL CORPORATION	PA-180000-AW-02 Steel products (except for construction use)		
10	2020/10/26	JR-AW-20001E	TINFREE STEEL	NIPPON STEEL CORPORATION	PA-180000-AW-02 Steel products (except for construction use)		
9	2019/12/06	JR-AJ-19010E	NS Fire resistant steel	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
8	2019/12/06	JR-AJ-19009E	T-shapes from NSHYPER BEAMTM	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
7	2019/12/06	JR-AJ-19008E	T-shapes	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
6	2019/12/06	JR-AJ-19007E	H-piles	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
5	2019/12/06	JR-AJ-19006E	I-shapes, Channels	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
4	2019/12/06	JR-AJ-19005E	NS Tough & Thick Web H-shapes(NS-TWHTM)	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
3	2019/12/06	JR-AJ-19004E	Jumbo wide flange shapes	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
2	2019/12/06	JR-AJ-19003E-A	NSHYPER BEAMTM	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		
1	2019/12/06	JR-AJ-19002E	Wide flange shapes	NIPPON STEEL CORPORATION	PA-180000-AJ-02 Steel products for construction		

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LCA promotions by JISF

JISF LCA site: closed loop recycling, LC thinking, ISO 20915 standard, LCI data collection, etc.

Overview

Overview

Details of Data

Function and Functional Unit | System Boundary | Data quality | Participating companies | Calculation of an average value | Assumptions of methodology and handling of co-products | Data format | Recycling Rate | Precautions | Data request

Overview

The Japan Iron and Steel Federation (JISF), in cooperation with worldsteel's LCI data collection, conducts a highly comprehensive, representative and transparent LCI study in accordance with ISO 20915, JIS Q 20915, ISO 14040 and ISO 14044 standards, based on the data collected by its member steel manufacturers on a regular basis. The published result are Japanese average data.
The Japanese average LCI data for steel products disclosed here is the result of LCI data collection and calculation with the methodology according to the ISO 20915 standard and JIS Q 20915, the methodology common to the global steel industry. The Japan Iron and Steel Federation collected primary data based on the actual operation in steel mills for fiscal 2018 and calculated the Japanese average LCI values for each steel product in the LCA Study Working Group of the Technology Policy Committee.

Please click here to inquire about the world average LCI data from worldsteel.

Details of Data

Function and Functional Unit

One kg of a steel product at the factory gate is used as a functional unit.
The LCI study was applicable to the varieties of steel products shown in the table below. Detailed specifications

LCA promotions by JISF

LCA promotions by JISF

JISF promotes the sustainability of steel and life cycle thinking with SNS.
Page views reached over 4 million.
Collaboration with YouTuber and quiz campaign were effective for the promotion.