

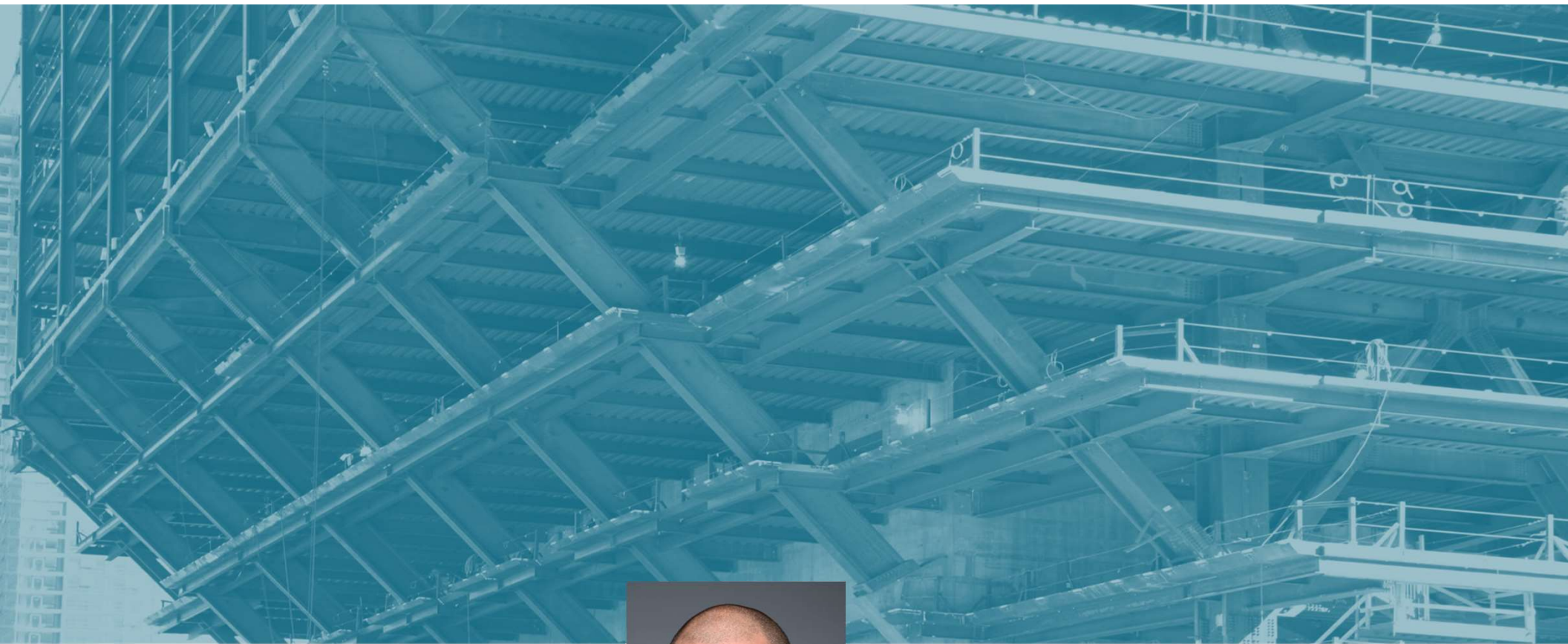


Sustainability Partner Program

RMSCA – Feb 22, 2024



**SUSTAINABILITY
PARTNER PROGRAM**



Max Puchtel, SE, PE

Director of Government Relations
and Sustainability
puchtel@aisc.org



**SUSTAINABILITY
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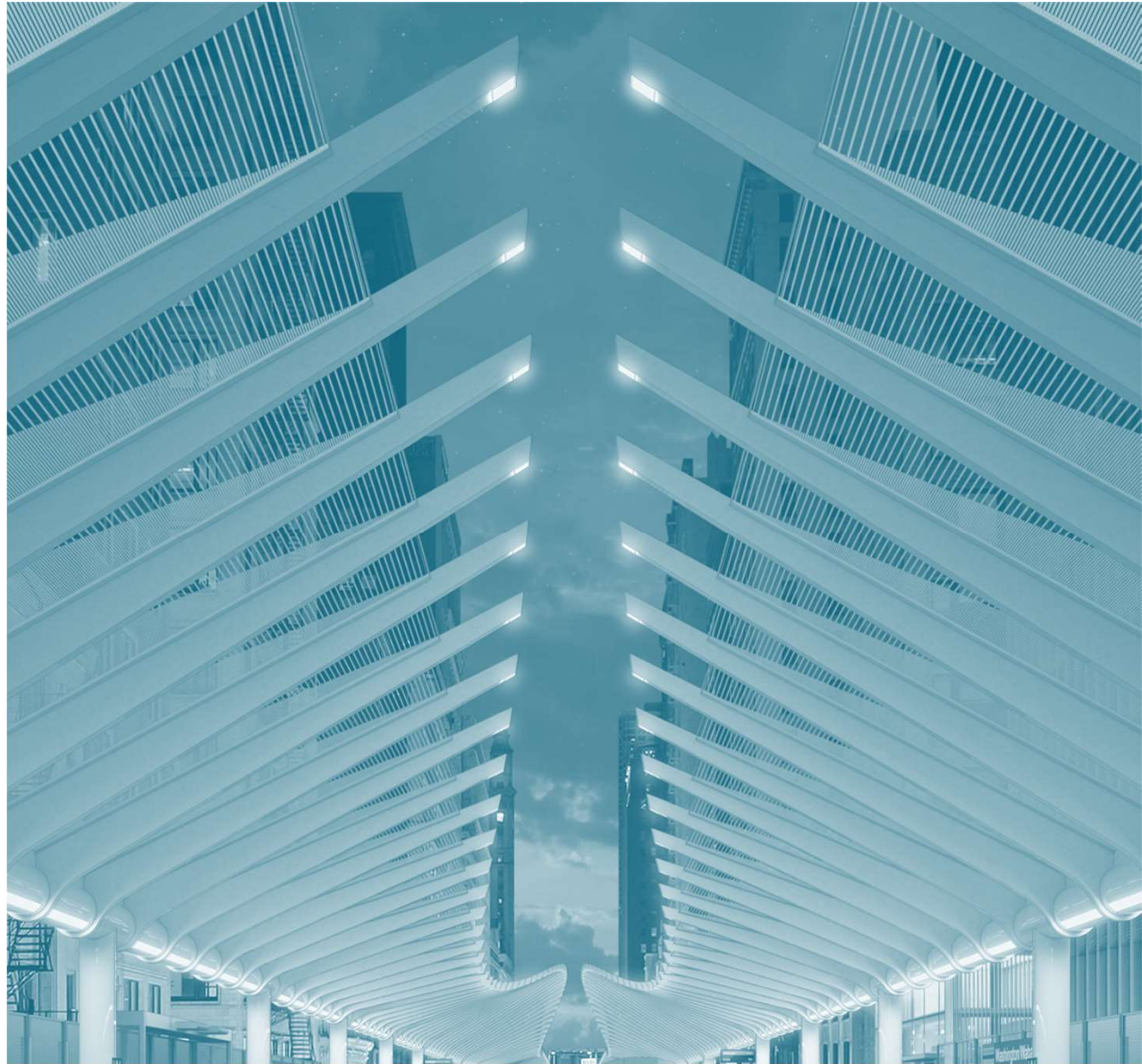
Outline

What is Green Steel, and
Why Do We Care?

The Fabricator's Role

The Partner Program

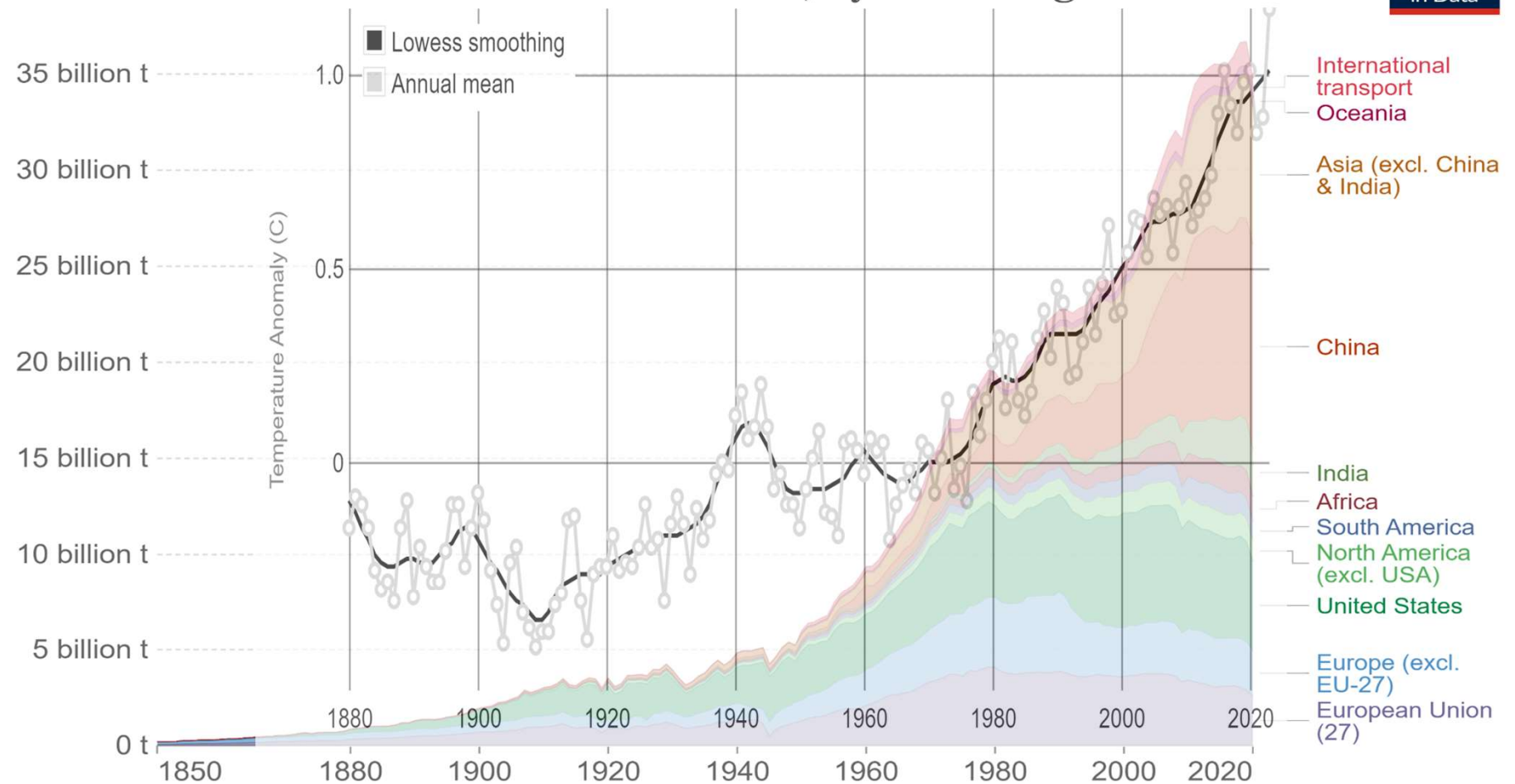
- Why?
- Who?
- What?
- Fabricator Perks





Annual CO₂ emissions from fossil fuels, by world region

Our World
in Data



Source: Global Carbon Project

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Note: This measures CO₂ emissions from fossil fuels and cement production only – land use change is not included. 'Statistical differences' (included in the GCP dataset) are not included here.

Construction Industry



MEP 2040
Committing to Zero



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Green Building Rating Systems



LEED

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN



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External Groups



FACT SHEET: Biden-Harris
Administration Announces New Buy
Clean Actions to Ensure American
Manufacturing Leads in the
21st Century



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Steel Mills

Gerdau will reduce greenhouse gas emissions to less than 50% of the global steel industry average by 2031

NUCOR IS COMMITTING TO A 35% REDUCTION IN GHG INTENSITY BY 2030.

SSAB is taking the lead in decarbonizing the steel industry

Steel Dynamics Sets Goal to Achieve Carbon Neutrality by 2050

Jul 7, 2021

THE CLEVELAND-CLIFFS COMMITMENT

Cleveland-Cliffs plans to reduce Greenhouse Gas (GHG) emissions 25% by 2030 from 2017 levels.



Fabricators



Steel already has a lot going for it, such as...

- Steel's virgin material, iron ore, is an abundantly available resource across the globe
- Over 98% of steel members get recycled at their end of life
- The average new member contains 93% recycled steel
- Steel can be recycled indefinitely into new steel products
- But....



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“What exactly is Green Steel?”

CO₂eq

Carbon Footprint

Emissions

Zero Carbon

Embodied Carbon

Carbon Neutral

**Environmental
Product Declaration
(EPD)**

Environmental Impacts

Global Warming Potential (GWP)

Greenhouse Gas (GHG)



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Today, it's all about Quantification

For every ton of W-shapes that leave a mill, how many tons of GHG emissions occurred?

~~1.00~~

0.734



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EMBODIED CARBON VS OPERATIONAL CARBON

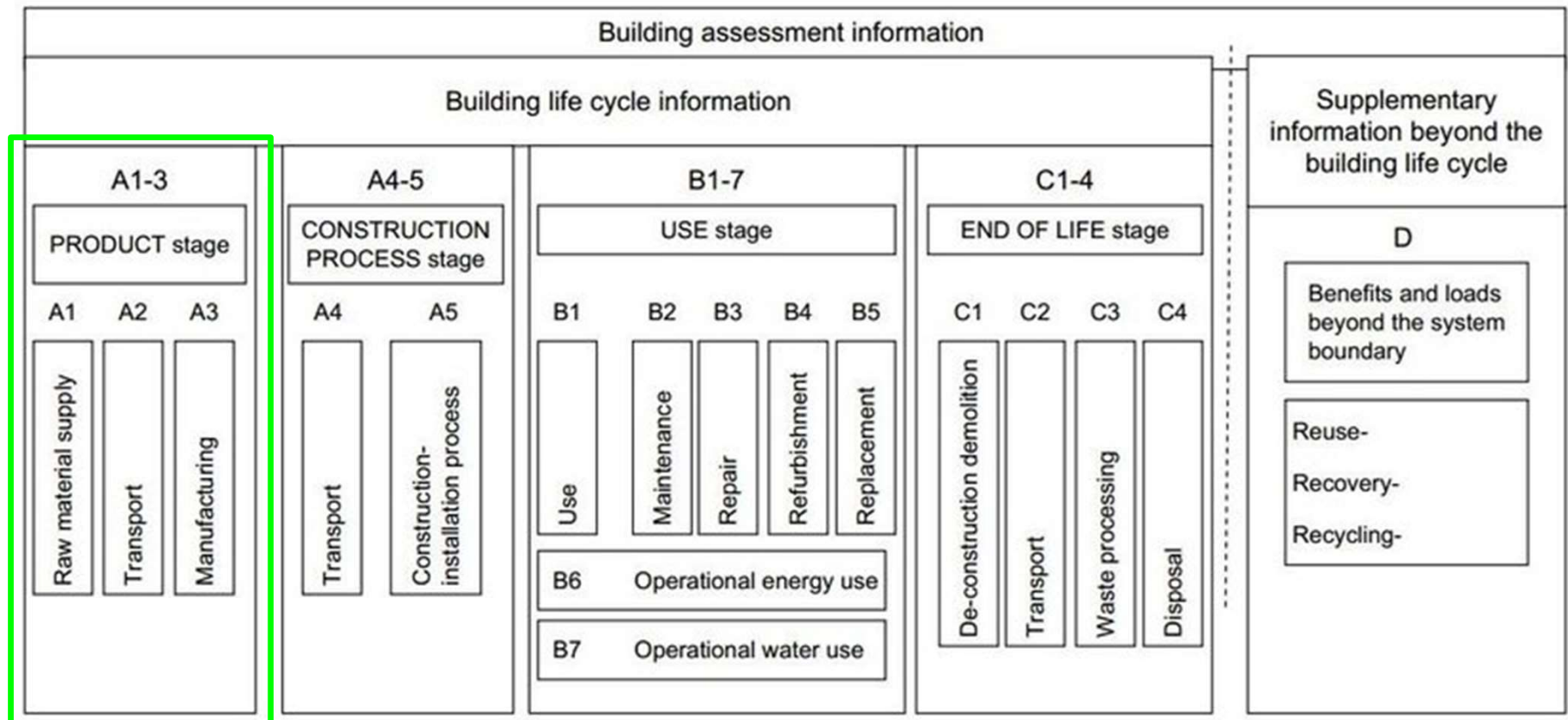


EMBODIED – the carbon footprint of construction materials

OPERATIONAL – the building energy consumption when in use

Life Cycle Assessment





Life Cycle Assessment

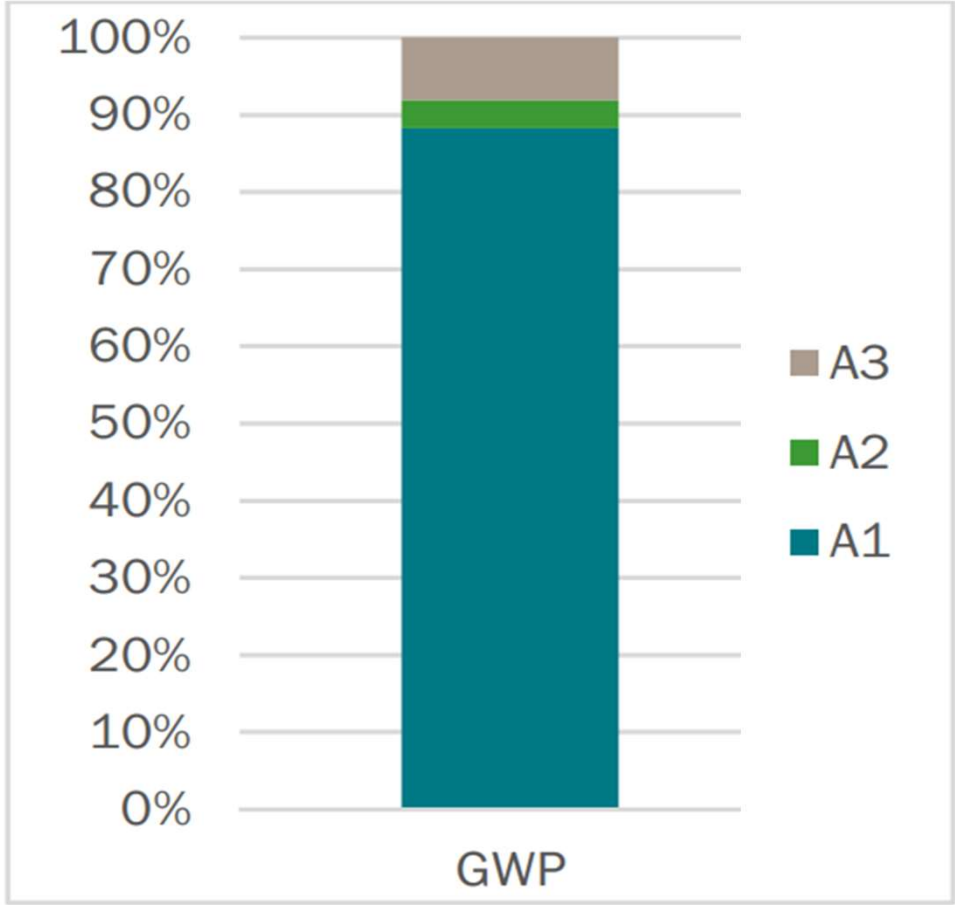


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**Which has the largest
environmental effect?**



The relative contribution of each life-cycle stage to the overall cradle-to-fabricator-gate Global Warming Potential (GWP)



Fabrication



Transport



Steel-making

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A1 Steel-making **GWP Sources**

**Iron, Steel, Zinc &
Alloy Materials**

Slag Materials

Ancillary Materials

Coal, Coke

Purchased Electricity

Natural Gas

Other Energy

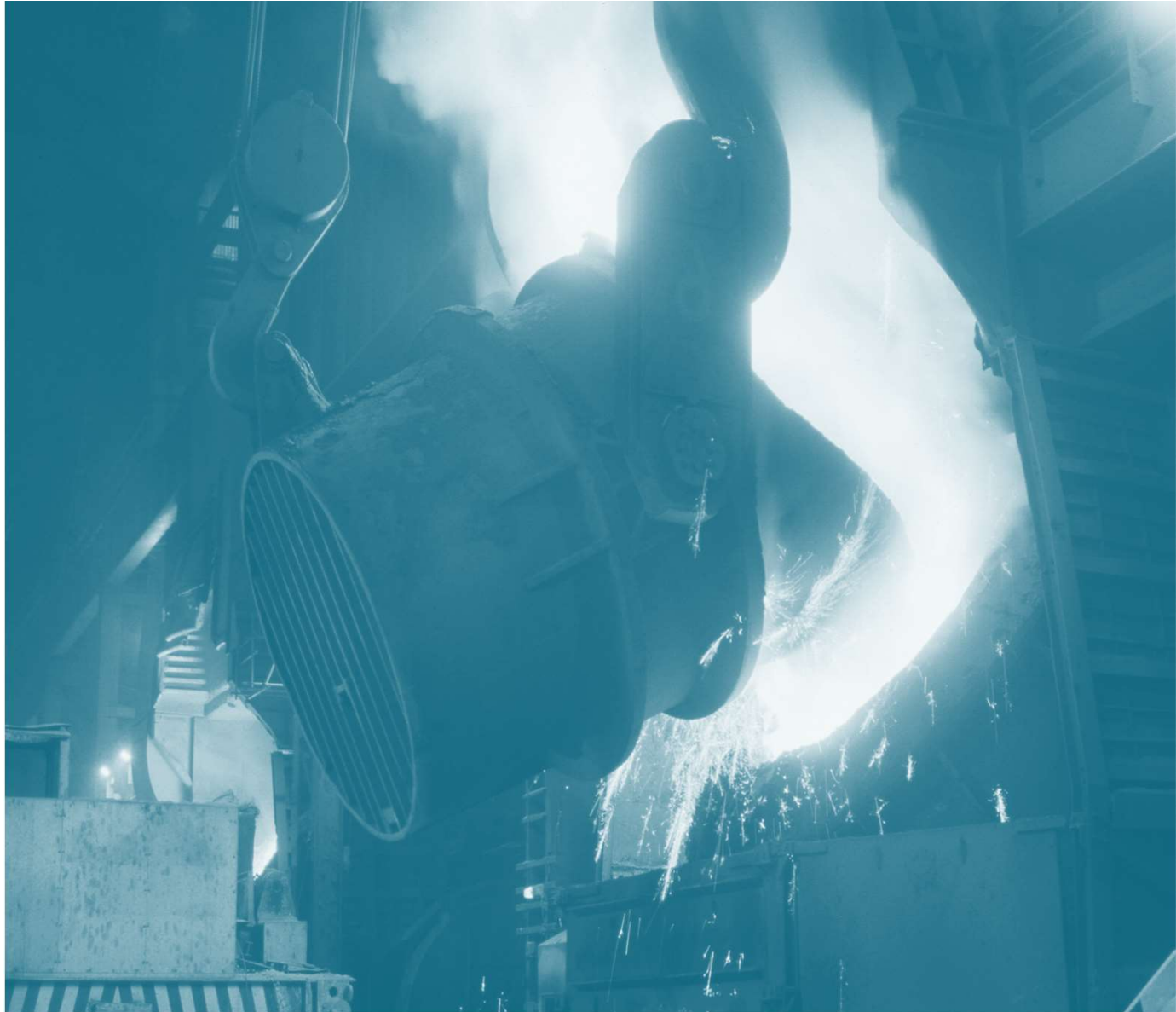
Facility & Water emissions

Transportation

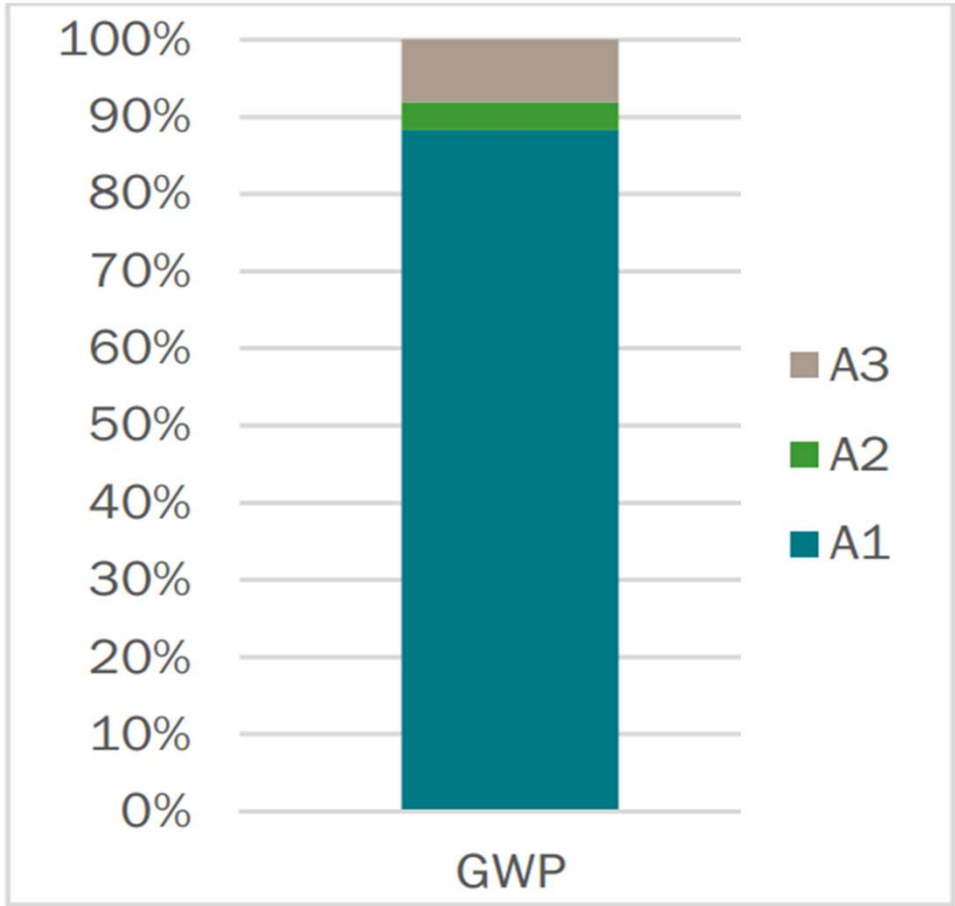
Water

Waste

Other



The relative contribution of each life-cycle stage to the overall cradle-to-fabricator-gate Global Warming Potential (GWP)



Fabrication



Transport



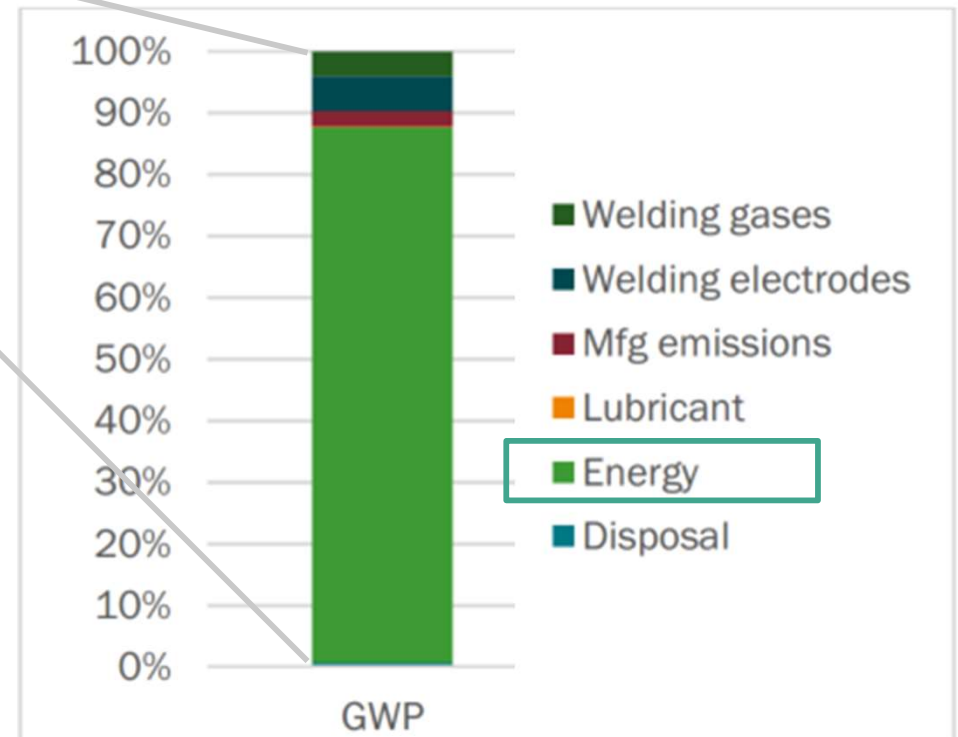
Steel-making

INABILITY
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Breakdown of Typical Fabrication Impacts

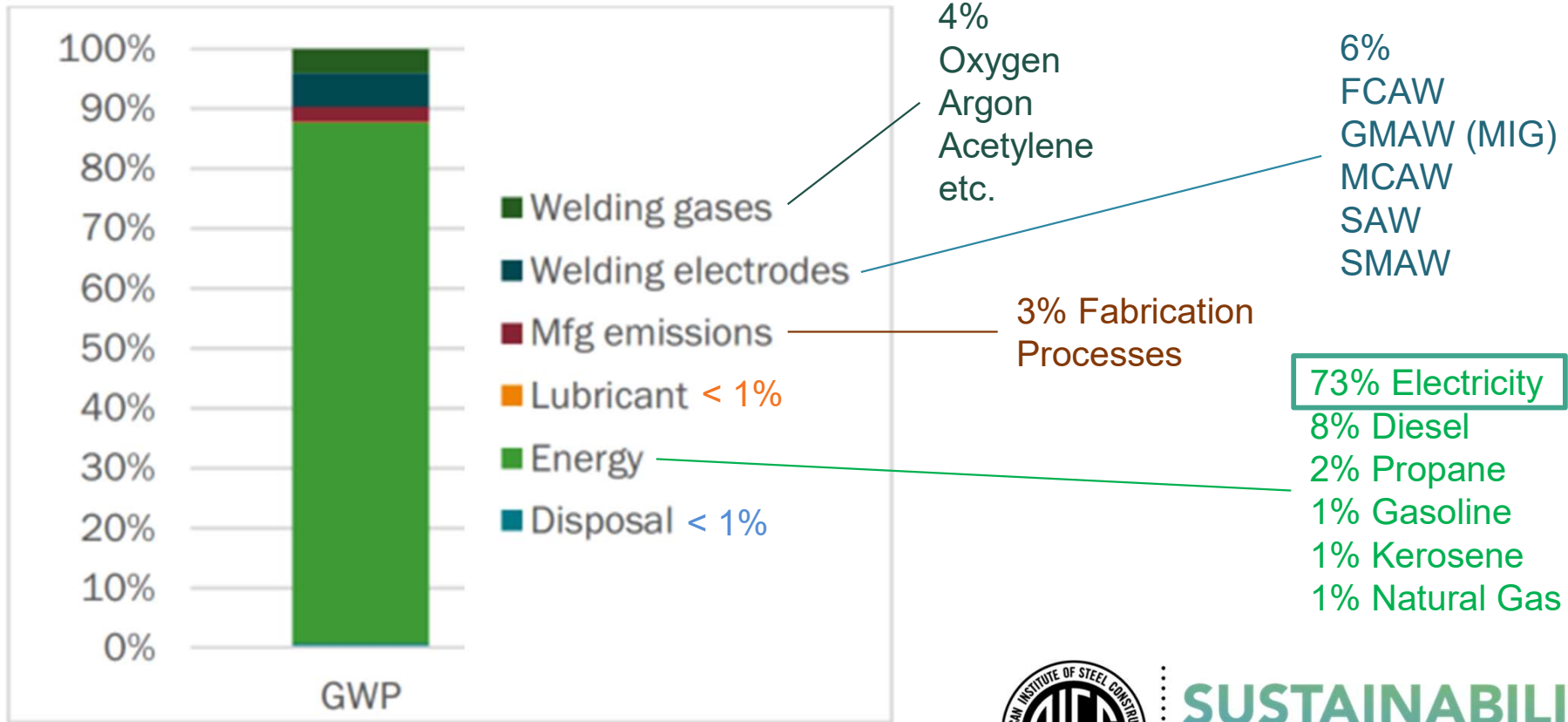


Total = Mill + Transport + Fabrication



Fabrication only

Breakdown of Typical Fabrication Impacts



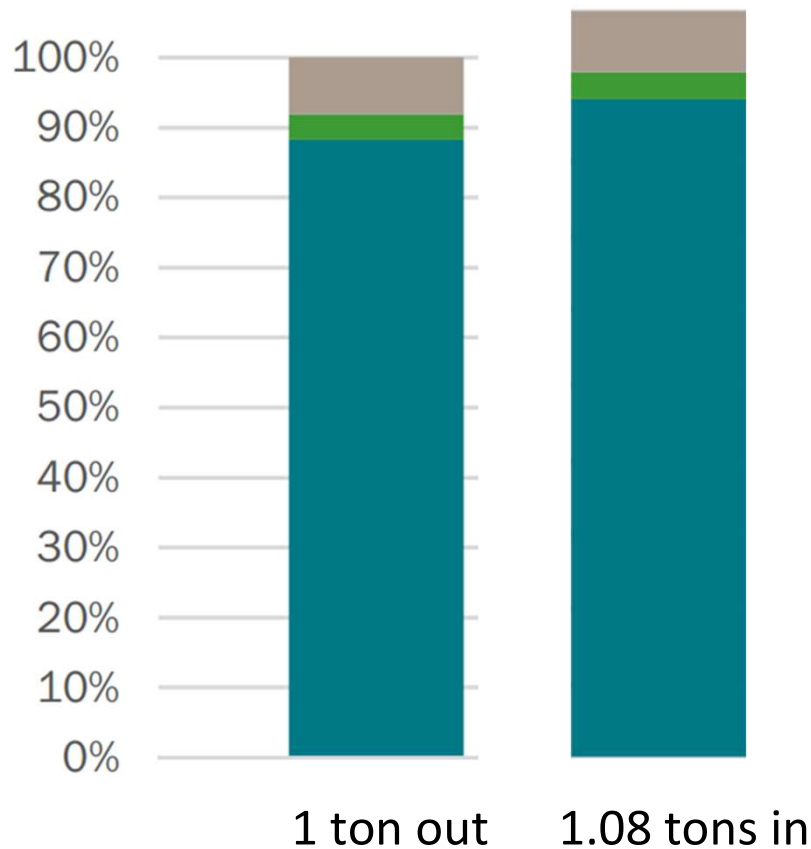
Fabrication only



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Breakdown of Typical Fabrication Impacts

Industry average fabricator waste rate is 7.7%.



Waste



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Industry-wide EPDs, available at aisc.org/epd

ENVIRONMENTAL PRODUCT DECLARATION
FABRICATED HOT-ROLLED STRUCTURAL SECTIONS
AMERICAN INSTITUTE OF STEEL CONSTRUCTION



The United States structural steel industry annually supplies, fabricates and erects structural steel framing for more than 10,000 buildings, bridges and industrial projects through a network of producers, service centers, steel fabricators and erectors.

The National Steel Bridge Alliance, a division of the American Institute of Steel Construction (AISC), is a national, not-for-profit organization dedicated to advancing steel bridge design and construction. NSBA is a unified industry organization of businesses and agencies interested in the development, construction and promotion of cost-effective steel bridges. We represent the entire steel bridge community.

Long committed to the principles of sustainable manufacturing, the industry remains the world leader in the use of recycled materials and end-of-life recycling, with the recycled content of hot-rolled structural beams and columns produced at US mills averaging in excess of 93% and an end-of-life recovery rate of 98%.

The American Institute of Steel Construction is a not-for-profit technical institute and trade association established in 1921 to serve the structural steel design community and construction industry. AISC currently represents 3 producers of hot-rolled structural sections and nearly 1,000 structural steel fabricators in the US.

Hot rolled structural steel sections complying with the definition of structural steel in AISC 303-16 produced in the United States and fabricated by an AISC member fabricator.

Use of this EPD is limited to AISC members. Member names are available online at www.aisc.org/epd



ENVIRONMENTAL PRODUCT DECLARATION
FABRICATED STEEL PLATE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION



The United States structural steel industry annually supplies, fabricates and erects structural steel framing for more than 10,000 buildings, bridges and industrial projects through a network of producers, service centers, steel fabricators and erectors.

The National Steel Bridge Alliance, a division of the American Institute of Steel Construction (AISC), is a national, not-for-profit organization dedicated to advancing steel bridge design and construction. NSBA is a unified industry organization of businesses and agencies interested in the development, construction and promotion of cost-effective steel bridges. We represent the entire steel bridge community.

Long committed to the principles of sustainable manufacturing, the industry remains the world leader in the use of recycled materials and end-of-life recycling, with the recycled content of steel plate produced at US mills averaging in excess of 80% and an end-of-life recovery rate of 98%.

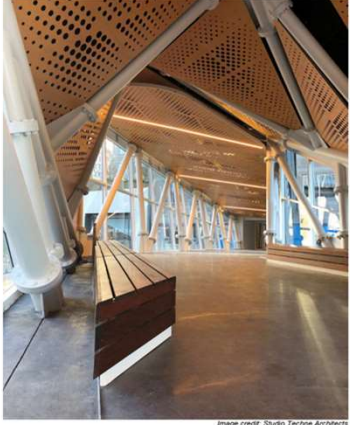
The American Institute of Steel Construction is a not-for-profit technical institute and trade association established in 1921 to serve the structural steel design community and construction industry. AISC currently represents 3 producers of steel plate and nearly 1,000 structural steel fabricators in the US.

Steel plate complying with the definition of structural steel in AISC 303-16 produced in the United States and fabricated by an AISC member fabricator.

Use of this EPD is limited to AISC members. Member names are available online at www.aisc.org/epd



ENVIRONMENTAL PRODUCT DECLARATION
FABRICATED HOLLOW STRUCTURAL SECTIONS
AMERICAN INSTITUTE OF STEEL CONSTRUCTION
STEEL TUBE INSTITUTE



The United States structural steel industry annually supplies, fabricates, and erects structural steel framing for more than 10,000 buildings, bridges, and industrial projects through a network of producers, service centers, steel fabricators, and erectors.


Long committed to the principles of sustainable manufacturing, the industry remains the world leader in the use of recycled materials and end-of-life recycling with an end-of-life recovery rate exceeding 97%.

The American Institute of Steel Construction and its National Steel Bridge Alliance division is a not-for-profit technical institute and trade association established in 1921 to serve the structural steel design community and construction industry for buildings and bridges. AISC currently represents producers of structural sections, plate, and nearly 1,000 structural steel fabricators in the US.

The Steel Tube Institute (STI) was formed in 1930 when a group of manufacturers joined forces to promote and market steel tubing. Their goal was to mount a cooperative effort that would improve manufacturing techniques and inform customers about their products' utility and diversity. The organization is dedicated to the betterment of the steel industry and to the advancement of its member companies.

Shown above are hollow structural sections (HSS) complying with the definition of structural steel in AISC 303-16, produced in North America by an STI member, and fabricated by an AISC member fabricator.

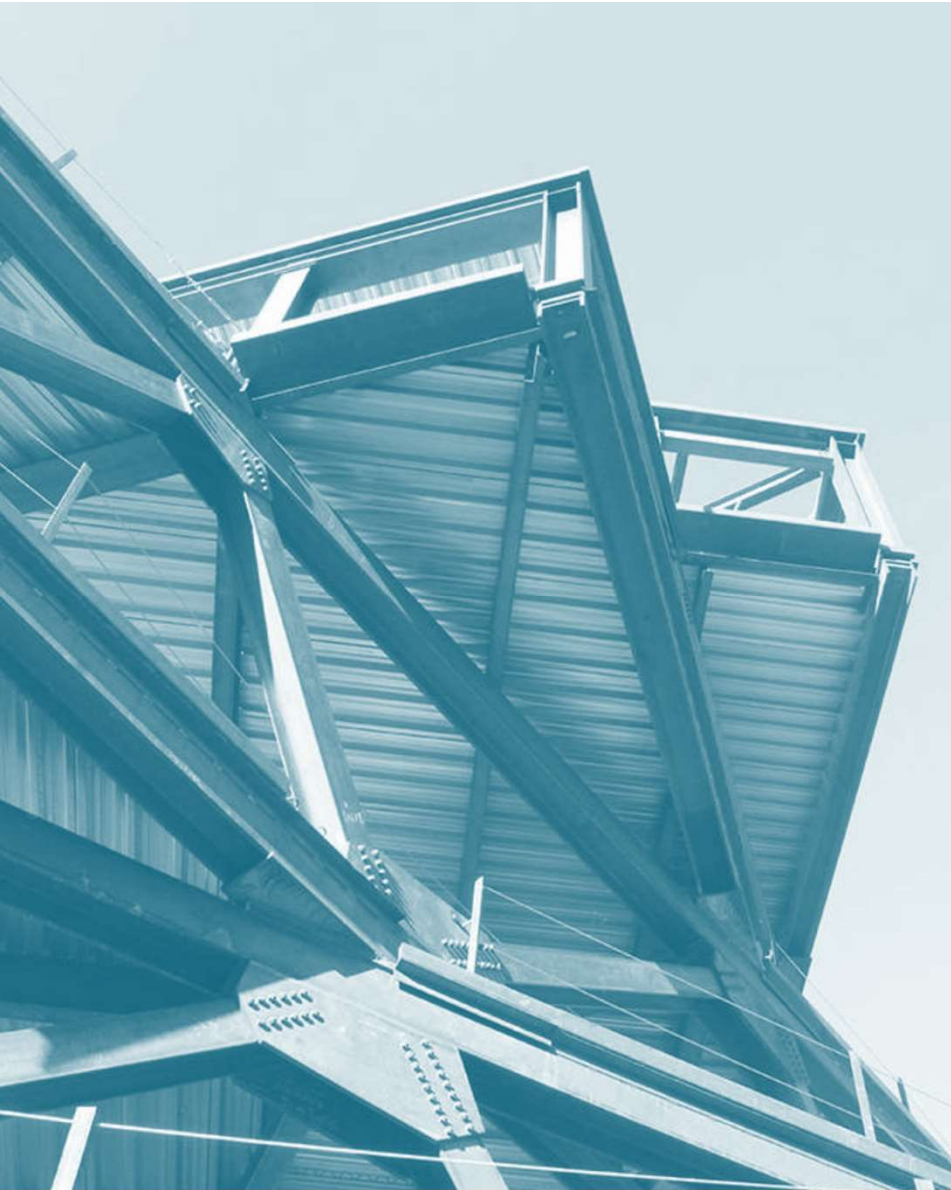
Use of this EPD is limited to AISC and STI members. AISC member names are available online at www.aisc.org/epd. STI members include Atlas Tube, Maruchi American Corporation, Maruchi Leavitt Pipe & Tube, Maruchi Oregon Steel Tube (MOST), Nucor Tubular Products, Searing Industries, Vest, Inc., and Wheatland Tube.



Mill-specific EPDs too!



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Who makes domestic structural HRS?



NUCOR®



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Who makes domestic structural plate?

 **CLIFFS**

NUCOR[®]

SSAB



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Who makes domestic structural HSS?



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95% Industry Representation



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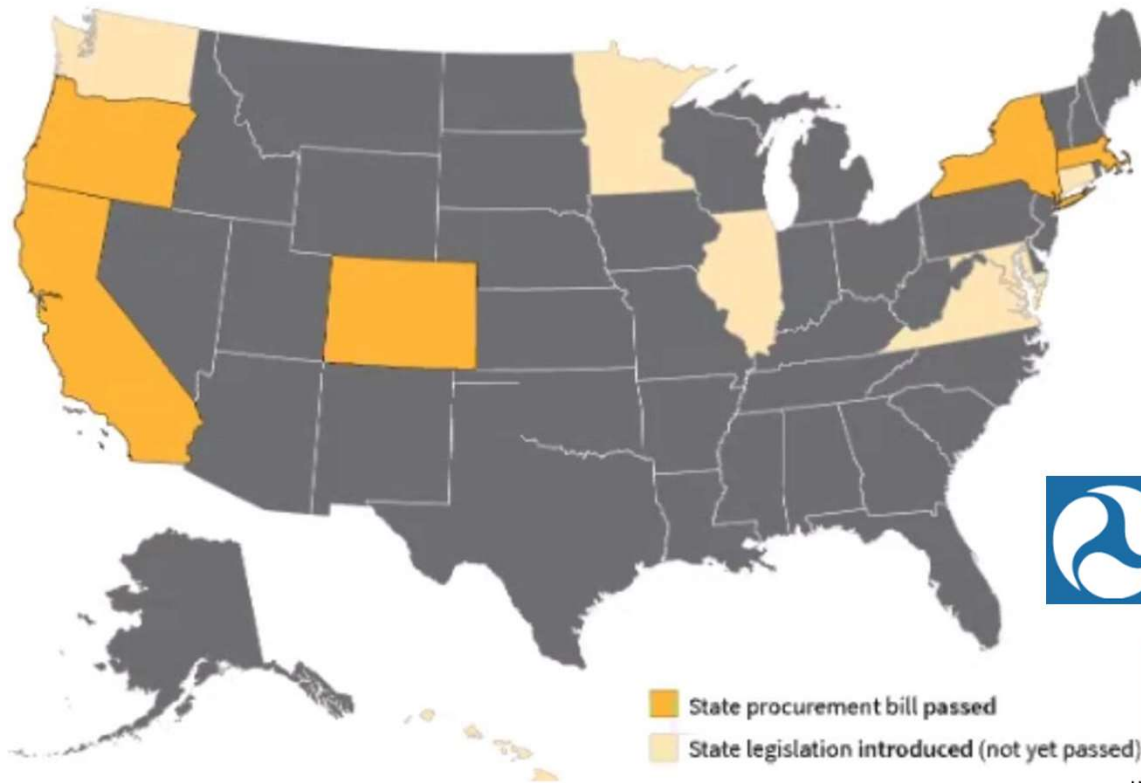
~~Advocacy~~

Buy Clean



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Buy Clean Collaboration



Regulatory GWP Compliance for Structural Steel based on Global Warming Potential (ton CO2eq / ton)				State Buy Clean					Federal Buy Clean <u>General Services Administration</u>							Building Codes				
2/15/2024 last updated				<u>California</u> (unfab)	<u>Colorado</u> <u>QSA</u> (fab)	Colorado DOT	Oregon DOT	Minnesota	20th % Limit (unfab)	(fab)	40th % Limit (unfab)	(fab)	50th % Limit (unfab)	(fab)	FHWA	<u>Denver Green Code</u> (unfab)	(fab)	<u>CalGreen</u> (unfab)		
Hot-Rolled Sections	Company	Location	Cradle-to-Mill-Gate	Cradle-to-Fabricator-Gate	1.01	1.22	TBD	TBD	TBD	0.686	1.022	0.713	1.128	0.869	1.163	TBD	1.49	1.83	1.77	
	Gerdau	<u>Petersburg, VA</u>	0.527	0.687	Complies	Complies				Complies	Complies	Complies	Complies	Complies	Complies		Complies	Complies	Complies	
		<u>Midlothian, TX</u>	0.713	0.888	Complies	Complies				Complies	Complies	Complies	Complies	Complies	Complies		Complies	Complies	Complies	
		<u>Cartersville, GA</u>	0.686	0.866	Complies	Complies				Complies	Complies	Complies	Complies	Complies	Complies		Complies	Complies	Complies	
	Nucor	<u>NYS (Blytheville, AR)</u>	0.816	0.996	Complies	Complies				Complies		Complies	Complies	Complies	Complies		Complies	Complies	Complies	
		<u>Berkeley (Huger, SC)</u>	1.60	1.83														Complies	Complies	
SDI	<u>Columbia City, IN</u>	0.930	1.14	Complies	Complies									Complies		Complies	Complies	Complies		
Plate	Company	Location	Cradle-to-Mill-Gate	Cradle-to-Fabricator-Gate	1.49	1.73	TBD	TBD	TBD	0.987	No Limit Set	1.152	No Limit Set	1.190	No Limit Set	TBD	2.21	2.60	2.61	
	Clev. Cliffs	Burns Harbor, IN	no EPD	no EPD																
		Coatesville, PA	no EPD	no EPD																
	Nucor	<u>Hertford County, NC</u>	1.24	1.49	Complies	Complies											Complies	Complies	Complies	
		<u>Tuscaloosa, AL</u>	1.39	1.64	Complies	Complies											Complies	Complies	Complies	
	SSAB	<u>Muscatine, IA</u>	0.849	scope not reported	Complies	Complies				Complies		Complies		Complies			Complies	Complies	Complies	
Hollow Structural Sections	Atlas Tube	<u>Chicago, IL</u>	1.62	1.89	Complies	Complies											Complies	Complies	Complies	
		<u>Harrow, ON</u>	1.78	2.06													Complies	Complies	Complies	
		<u>Plymouth, MI</u>	1.55	1.81	Complies	Complies							Complies		Complies		Complies	Complies	Complies	
		Bull Moose	<u>Burlington, ON</u>	1.75	scope not reported													Complies		Complies
			<u>Casa Grande, AZ</u>	2.09	scope not reported													Complies		Complies
	<u>Chicago Heights, IL</u>		1.68	scope not reported	Complies												Complies		Complies	
	<u>Elkhart, IN</u>		1.69	scope not reported	Complies												Complies		Complies	
	<u>Gerald, MO</u>		1.82	scope not reported													Complies		Complies	
	Maruichi Ameri	<u>Masury, OH</u>	1.72	scope not reported													Complies		Complies	
		<u>Trenton, GA</u>	1.75	scope not reported													Complies		Complies	
		<u>Santa Fe Springs, CA</u>	1.90	scope not reported													Complies		Complies	
		<u>Chicago, IL</u>	1.72	scope not reported													Complies		Complies	
		<u>Portland, OR</u>	1.62	scope not reported	Complies												Complies		Complies	
	Nucor	<u>Birmingham, AL</u>	1.54	1.81	Complies	Complies							Complies		Complies		Complies	Complies	Complies	
		<u>Chicago, IL</u>	1.17	1.40	Complies	Complies					Complies		Complies		Complies		Complies	Complies	Complies	
		<u>Decatur, AL</u>	1.59	1.86	Complies	Complies							Complies		Complies		Complies	Complies	Complies	
		<u>Marseilles, IL</u>	1.35	1.60	Complies	Complies					Complies		Complies		Complies		Complies	Complies	Complies	
		<u>Trinity, AL</u>	1.59	1.86	Complies	Complies									Complies		Complies	Complies	Complies	
	Searing Industri	<u>Cucamonga, CA</u>	1.69	scope not reported	Complies												Complies		Complies	
		<u>Cheyenne, WY</u>	1.61	scope not reported	Complies												Complies		Complies	
	Vest, Inc	<u>Vernon, CA</u>	1.70	scope not reported	Complies												Complies		Complies	

Sustainability Partner Program



Why?

Who?

What?

Fabricators: Become an AISC Sustainability Partner!

You'll gain:

- Sustainability expertise, through education customized for fabricators
- The skills and tools you need to successfully bid and navigate sustainability-focused projects
- Carbon footprint reduction strategies (bonus: financial savings!)
- Use of a dedicated marketing logo to showcase your sustainable practices

And member fabricators JOIN FOR FREE!



Get started today at
aisc.org/partnerprogram



**SUSTAINABILITY
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Eligible Branches

Below are your company's branches that are in good standing with AISC membership and are eligible to participate. If you know of a branch that wants to participate but don't see it below, please contact membership@aisc.org.

Name	Location	Assigned Contact	Status
High Steel Structures, Inc.	3501 W. 4th St. Williamsport, PA 17701-4113		Ready to Begin
High Steel Structures LLC	1915 Old Philadelphia Pike Lancaster, PA 17602		Ready to Begin

Application Summary

By default, your first application has begun! To join the Sustainability Partner Program, applicants must complete three sections: A. Education, B. Data, and C. Goals. The table below measures your progress in these sections, which should be completed in order. You have 60 days to complete all three sections on this page, and your work will be saved as you progress. If the application is not completed within 60 days, it will be automatically ended by AISC and marked expired. You may then begin a new application. Continue below!

Company	Application Start Date	Application Status	A. Education	B. Data	C. Goals	Logo
Metals Fabrication Company, Inc.	10/25/2023 4:47:53 PM	In-Process/Not Submitted	Complete	Incomplete	Incomplete	

A. Learn with AISC Education

A fundamental goal of the Sustainability Partner Program is to build sustainability knowledge and competency in the fabricated structural steel industry.

In this section, you'll be directed to the AISC Learning Management System to learn about the sustainability landscape, your impacts as a fabricator, and how to navigate external requirements. Once you've completed the courses and passed their assessments, you may return to this page to continue working on other sections of your application.

Each contact assigned to a branch is required to complete this education, and completing the education is only required once per contact. If a contact changes, the new contact will need to complete the education section.

Education Summary

Description	Training	Status*
Fabricated Structural Steel and Sustainability 101	Access Training	Complete
Fabricator Environmental Impacts	Access Training	Complete
External Requirements	Access Training	Complete

*The progress you make in the Learning Management System (LMS) will be displayed in the above table. **The system will refresh your status at 8am, 11am, 2pm, and 5pm CT.**

B. Gather and Submit Environmental Data

Thank you in advance for your contribution to this industry-wide collection of environmental data. Everything you submit will be kept strictly confidential and will be only available to a limited number of staff at AISC. Any published results would only occur in the form of industry averages and would be completely anonymous.

***Before beginning this section, we recommend you take some time to gather last year's purchasing, energy, and high-level production records. Data should only reflect the activities of the particular branch indicated at the top of this page.

Data Submission Summary

Company	City	State or Province	Data Year	Status	Submission	Report
Metals Fabrication Company, Inc.	Spokane	WA		Not Started	Start Submission	

C. Create a Sustainability Policy and Goal

AISC Sustainability Partners are continuously seeking ways to reduce their costs and carbon footprint. In this section, you'll choose your company's sustainability policy and goal. At a minimum, you'll commit to tracking your fabrication facility's energy use and the amount of steel waste produced, and you'll choose one sustainability goal.

Goals Summary

Goal	Goal Percent	Last Updated	Link	Report
			Create Goal	



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You choose the goal type: You choose the goal amount:

- 1.Waste Reduction.
- 2.Electricity Reduction.
- 3.Renewable Energy.
- 4.Electric Conversion.

%



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SUSTAINABILITY PARTNER PROGRAM

The following company is a member of the American Institute of Steel Construction in good standing with the Sustainability Partner Program. This document contains their required sustainability policy, which includes their commitment to sustainable structural steel fabrication and their annual sustainability goal.

Garbe Iron Works, Inc.

456 N. Broadway Aurora, IL 60505-2643
Developed by Ted F. Peshia
9/18/2023 12:29:47 PM

COMMITMENT

As an AISC Sustainability Partner, we are committed to doing our part to lower the carbon footprint of fabricated structural steel. This includes regularly tracking the energy consumption and waste output associated with our fabrication activities.

OUR ANNUAL SUSTAINABILITY GOAL

On a per fabricated structural steel production basis, reduce the annual electrical consumption (in kWh) associated with fabrication activities by 1%.

Executive Approval

Name _____

Signature _____

Date _____



SUSTAINABILITY PARTNER PROGRAM

You Get:
A Customized Report for
your Corporate Clients

How long will this take? < 2 hours

What does it cost? Free!



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