



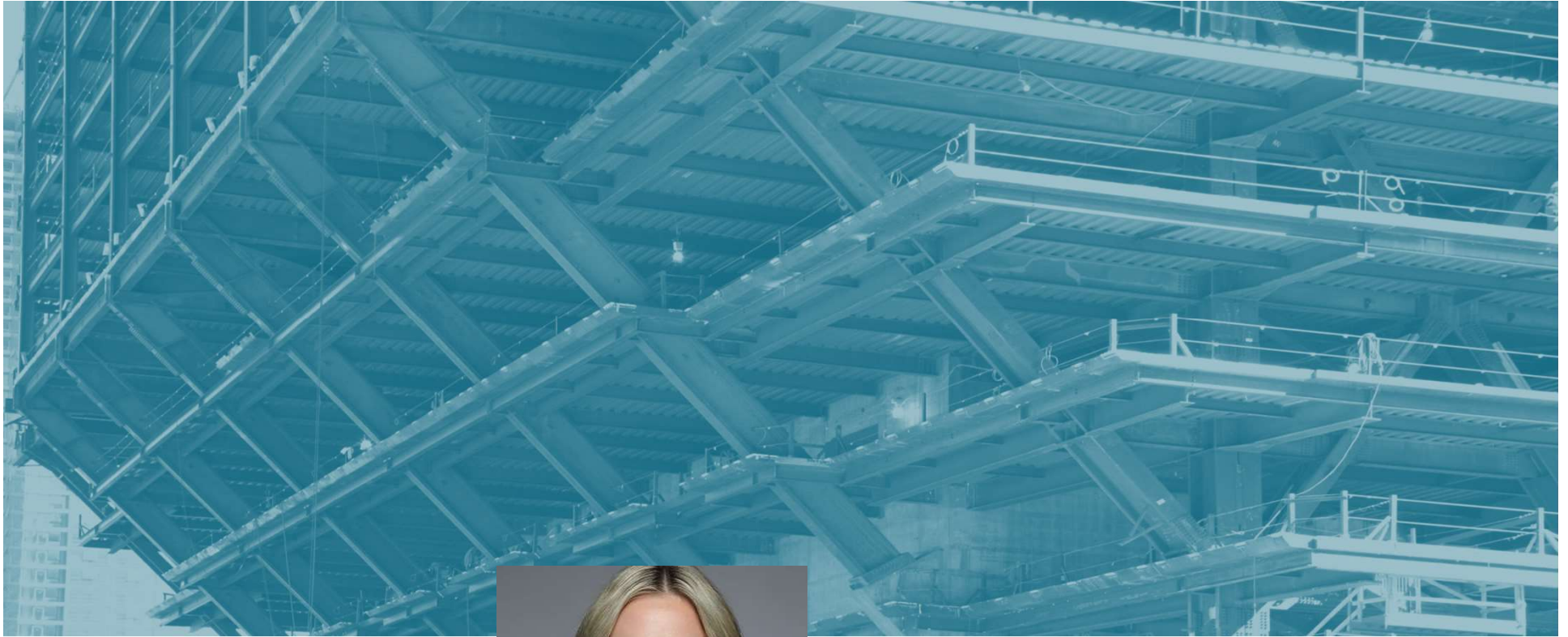
## **Sustainability Partner Program**

MASFA – April 18, 2024



**SUSTAINABILITY  
PARTNER PROGRAM**





**Hope Hrabowy**  
Structural Steel Specialist  
[hrabowy@aisc.org](mailto:hrabowy@aisc.org)



.....  
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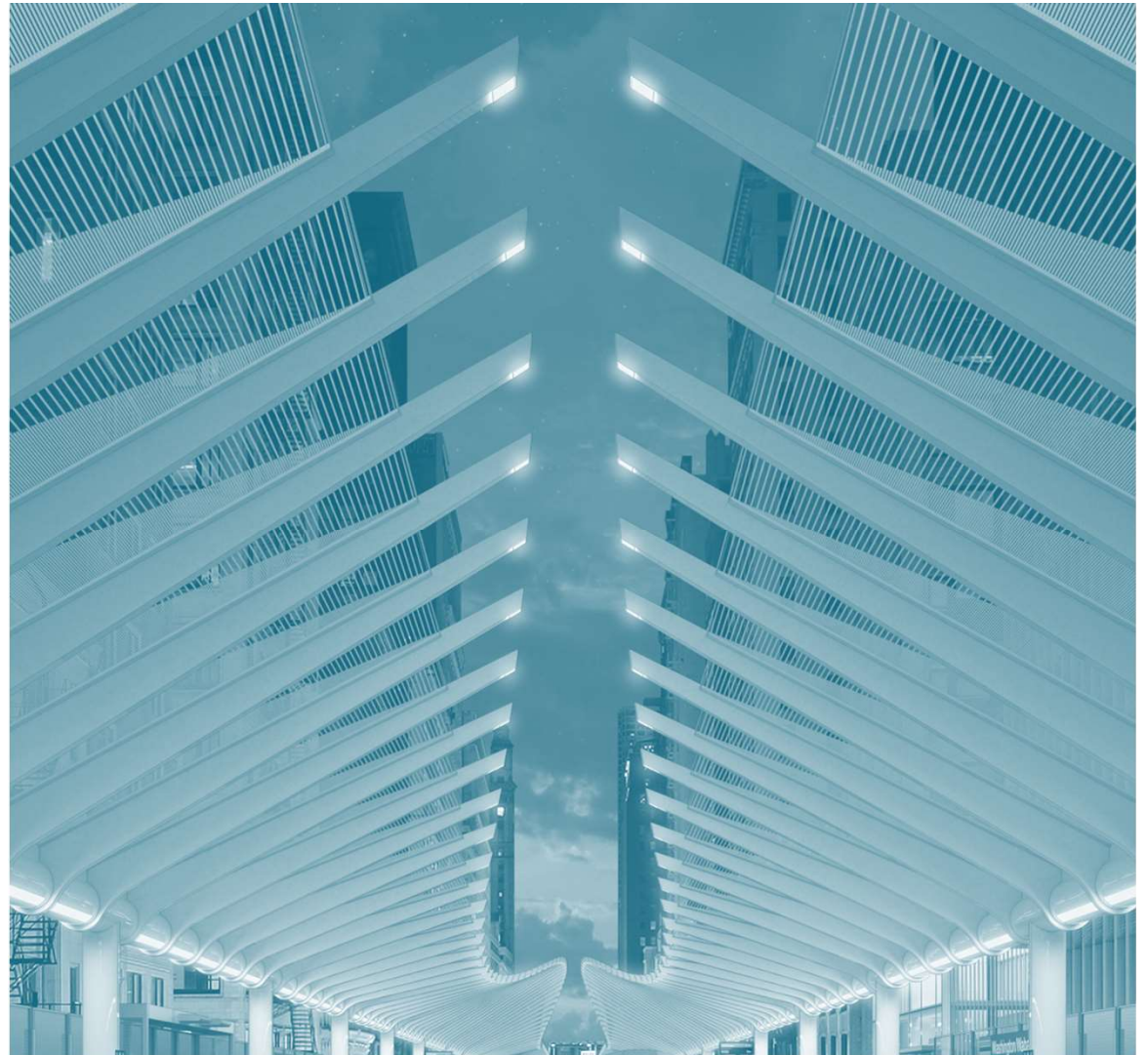
# Outline

What is Green Steel, and Why Do We Care?

The Fabricator's Role

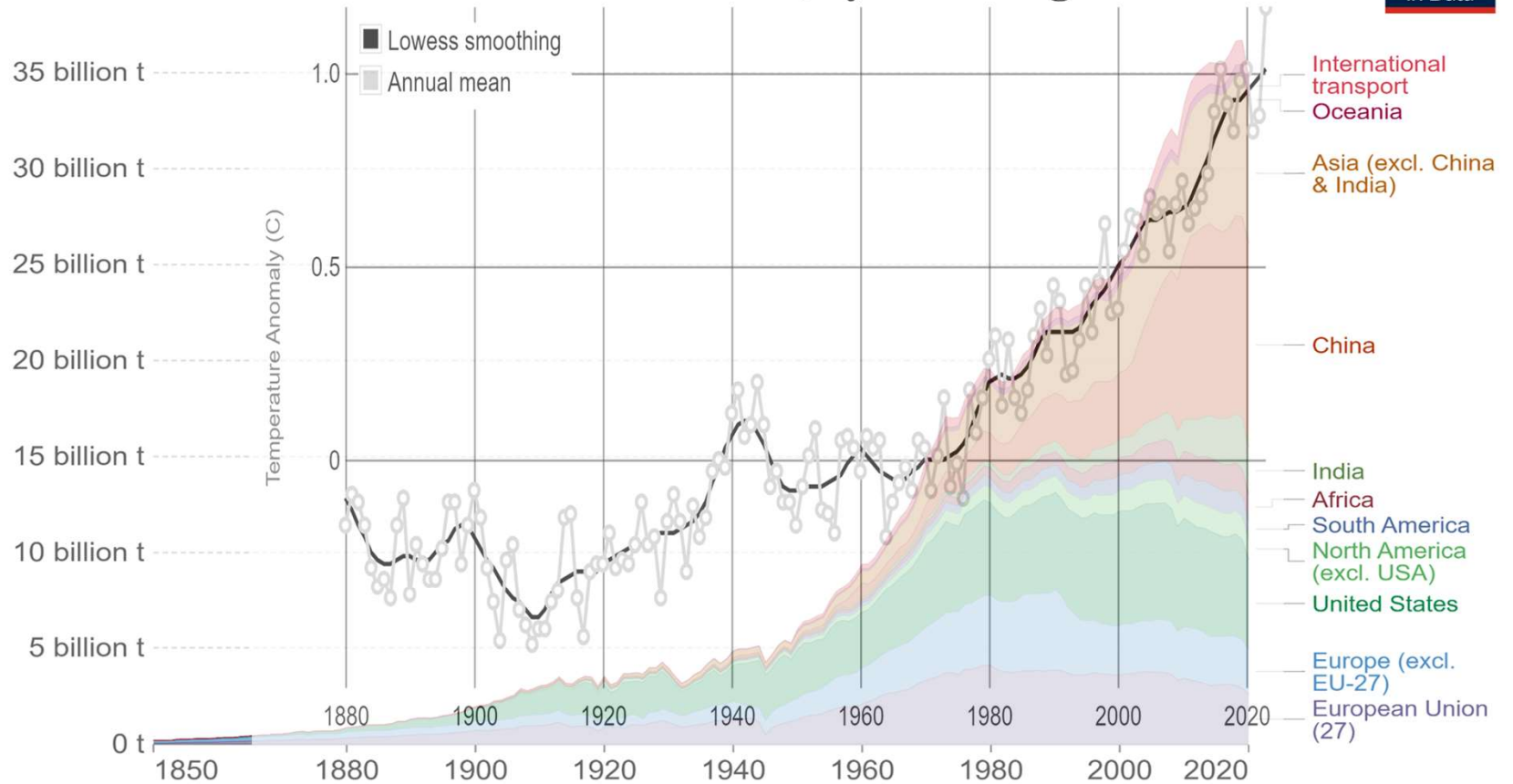
The Partner Program

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





# Annual CO<sub>2</sub> emissions from fossil fuels, by world region



Source: Global Carbon Project

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

Note: This measures CO<sub>2</sub> 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

CONTRACTOR'S  
COMMITMENT



STRUCTURAL  
ENGINEERING  
INSTITUTE



**MEP 2040**  
Committing to Zero



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# Green Building Rating Systems





## External Groups



**BLUEGREEN**  
ALLIANCE®



**C40**  
CITIES

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.

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# Fabricators





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

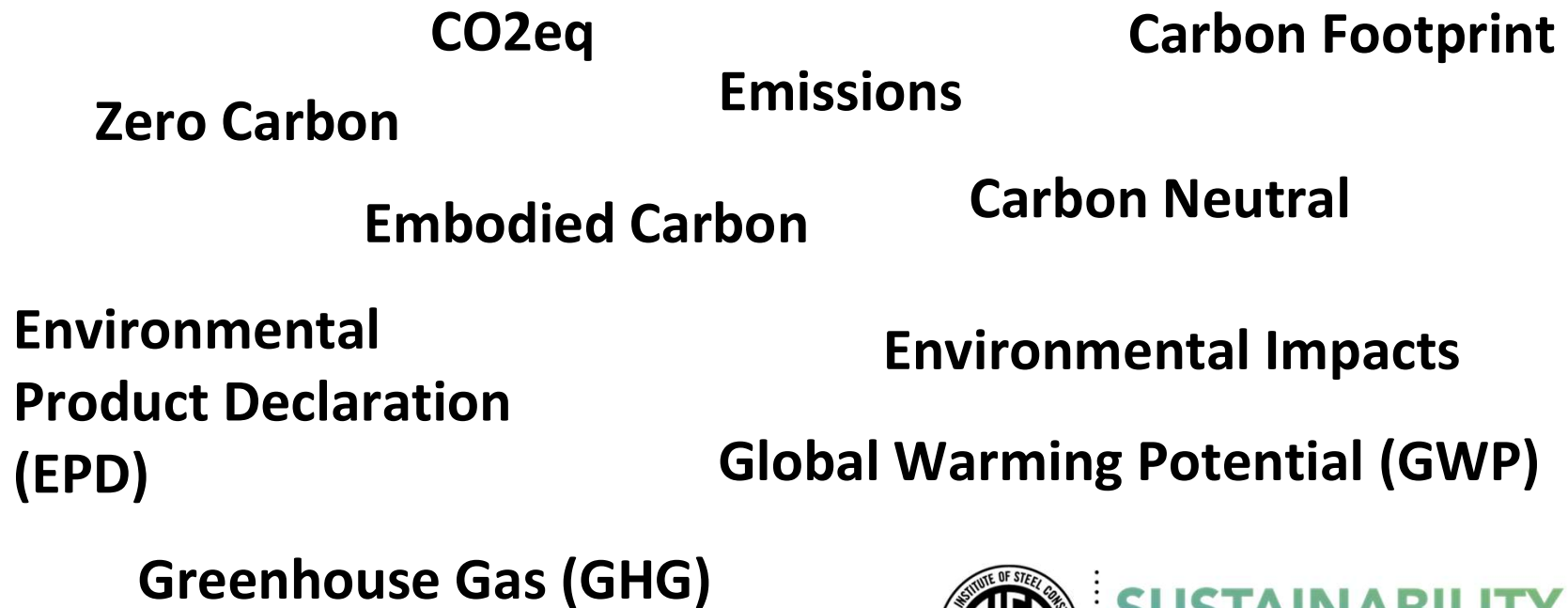
- Steel's virgin material, iron ore, is an abundantly available resource across the globe
- Over 98% of steel members get recycled at their end of life
- The average new member contains 93% recycled steel
- Steel can be recycled indefinitely into new steel products
- But....



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# “What exactly is Green Steel?”



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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

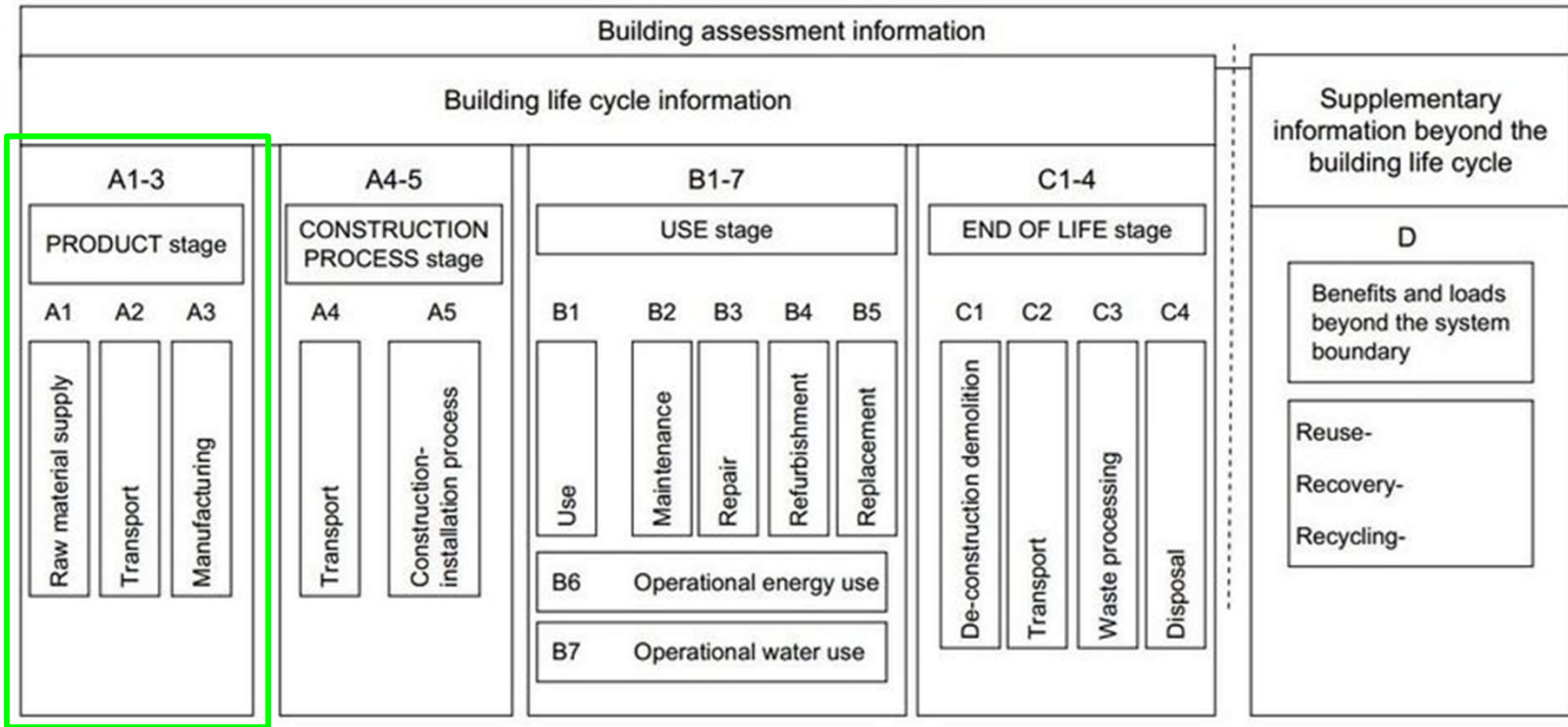
**OPERATIONAL** – the building energy consumption when in use

*Image by the RPS Group*

# Life Cycle Assessment







# Life Cycle Assessment

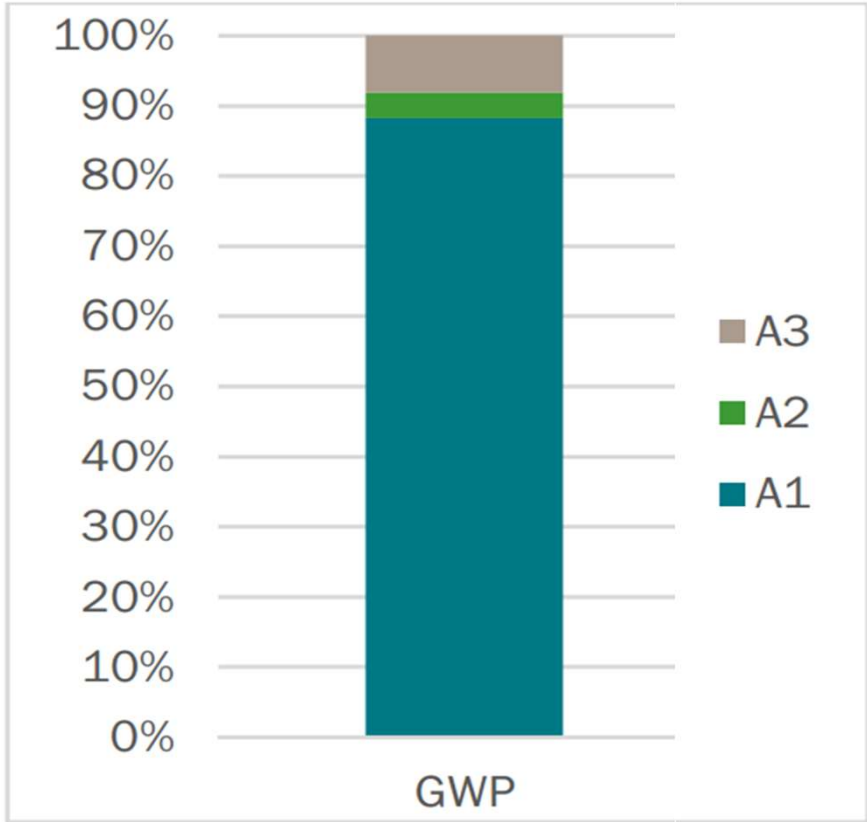


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**Which has the largest impact on the environment?**



# 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**

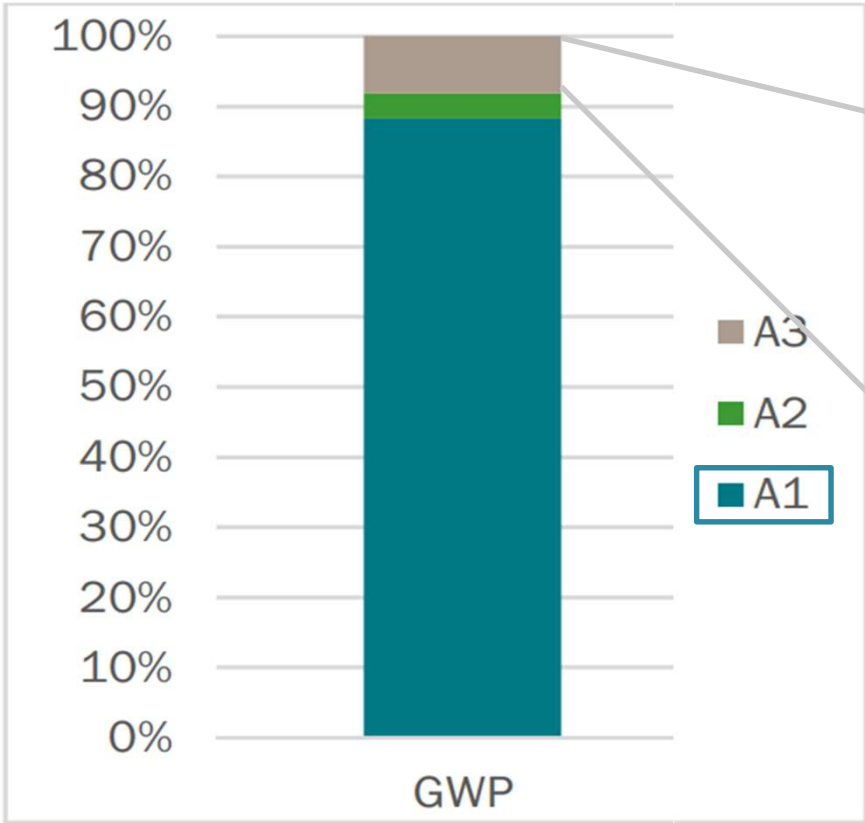
**Waste**

**Other**

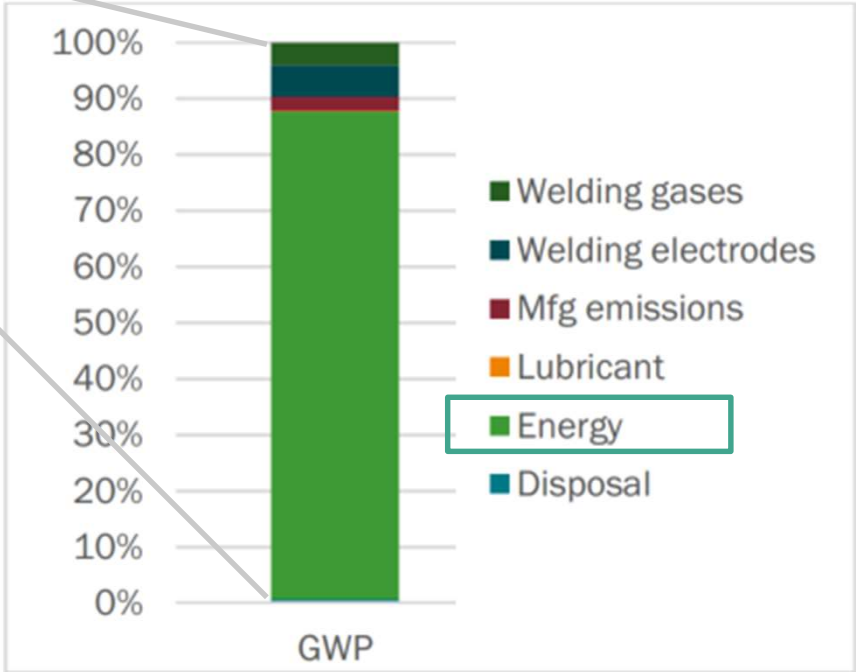




# Breakdown of Typical Fabrication Impacts

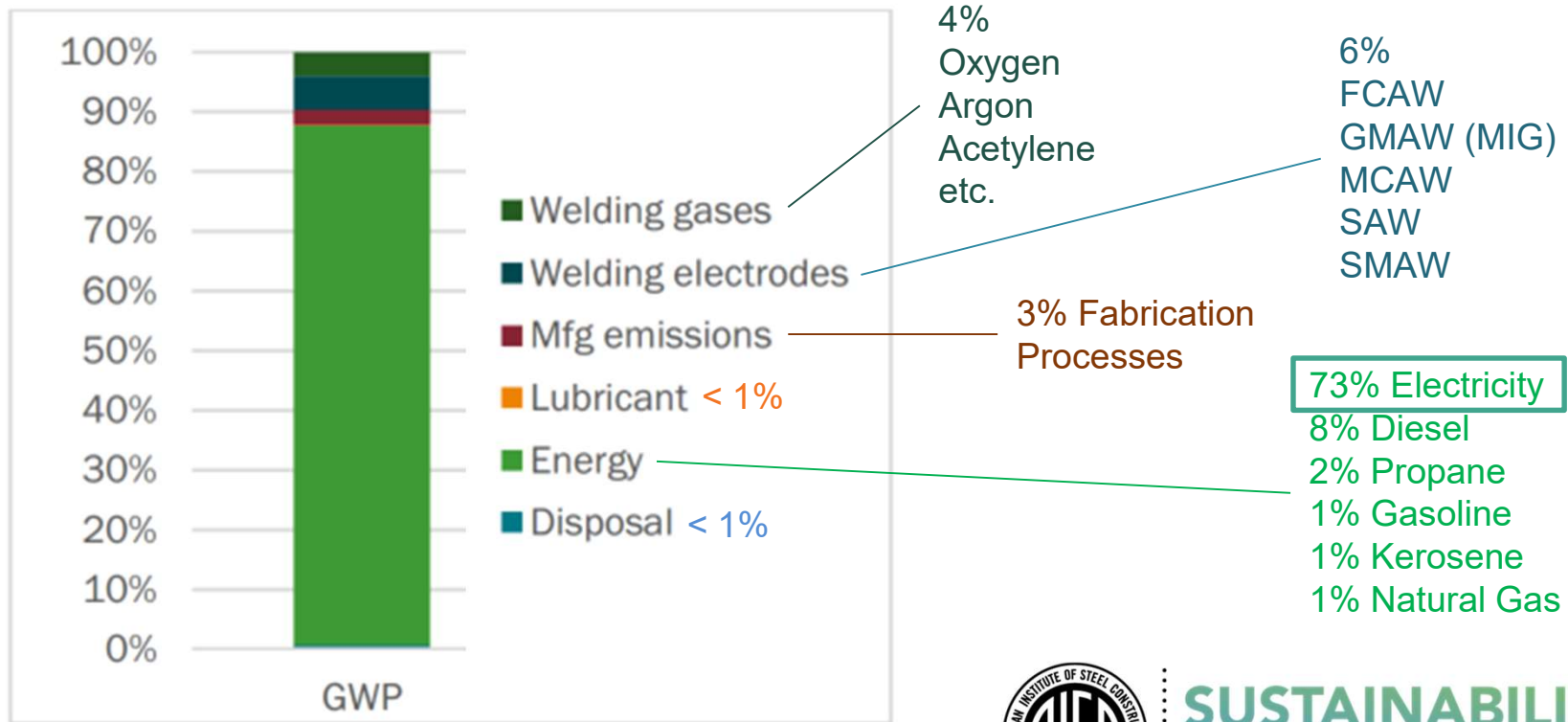


Total = Mill + Transport + Fabrication



Fabrication only

# Breakdown of Typical Fabrication Impacts



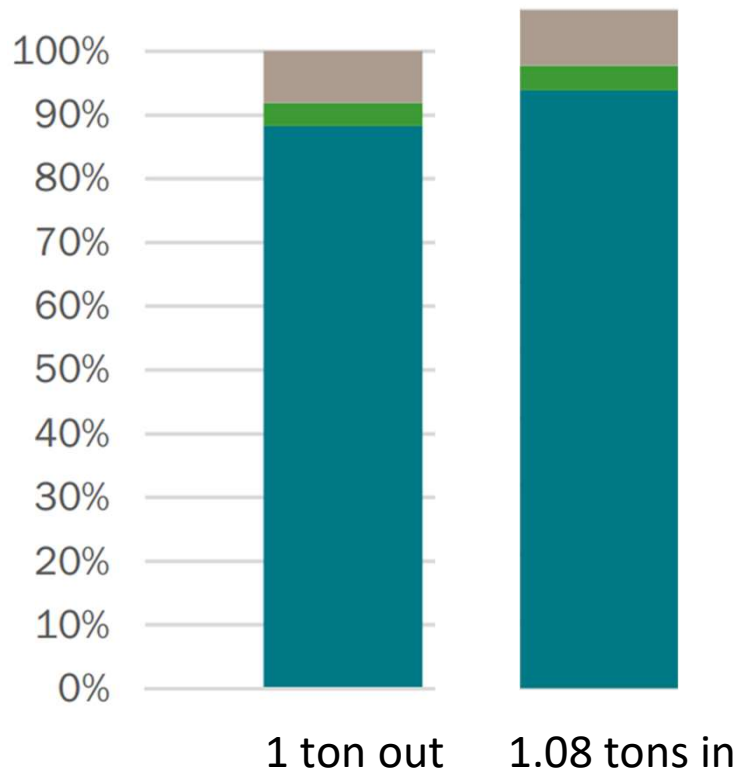
Fabrication only



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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](http://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](http://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%.

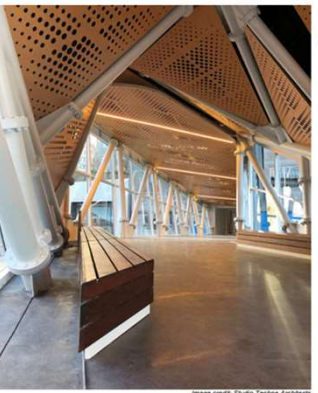
The American Institute of Steel Construction is a not-for-profit technical institute and trade association established in 1921 to serve the structural steel design community and construction industry. AISC currently represents 3 producers of steel plate and nearly 1,000 structural steel fabricators in 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](http://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, plates, 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](http://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**<sup>®</sup>



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# Who makes domestic structural plate?



.....  
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# Who makes domestic structural HSS?



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# 95% Industry Representation





~~Advocacy~~

Buy Clean



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Regulatory GWP Compliance for Structural Steel based on Global Warming Potential (ton CO <sub>2</sub> eq / ton)					State Buy Clean					Federal Buy Clean							Building Codes			
2/15/2024 last updated					California (unfab)	Colorado QSA (fab)	Colorado DOT	Oregon DOT	Minnesota	General Services Administration		FHWA		Denver Green Code (unfab)	CalGreen (unfab)					
		Cradle-to-Mill-Gate	Cradle-to-Fabricator-Gate	1.01	1.22	TBD	TBD	TBD	20th % Limit (unfab)	20th % Limit (fab)	40th % Limit (unfab)	40th % Limit (fab)	50th % Limit (unfab)	50th % Limit (fab)	TBD	1.49	1.83	1.77		
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	<a href="#">Petersburg, VA</a>	0.527	0.687	Complies	Complies				Complies	Complies	Complies	Complies	Complies	Complies		Complies	Complies	Complies	
		<a href="#">Midlothian, TX</a>	0.713	0.888	Complies	Complies				Complies	Complies	Complies	Complies	Complies	Complies		Complies	Complies	Complies	
		<a href="#">Cartersville, GA</a>	0.686	0.866	Complies	Complies				Complies	Complies	Complies	Complies	Complies	Complies		Complies	Complies	Complies	
	Nucor	<a href="#">NYS (Blytheville, AR)</a>	0.816	0.996	Complies	Complies				Complies		Complies	Complies	Complies	Complies		Complies	Complies	Complies	
	<a href="#">Berkeley (Huger, SC)</a>	1.60	1.83															Complies	Complies	
	<a href="#">Columbus City, IN</a>	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	<a href="#">Burns Harbor, IN</a>	no EPD	no EPD																
		<a href="#">Coatesville, PA</a>	no EPD	no EPD																
	Nucor	<a href="#">Hertford County, NC</a>	1.24	1.49	Complies	Complies											Complies	Complies	Complies	
		<a href="#">Tuscaloosa, AL</a>	1.39	1.64	Complies	Complies											Complies	Complies	Complies	
	SSAB	<a href="#">Muscatine, IA</a>	0.849	scope not reported	Complies	Complies				Complies		Complies		Complies			Complies	Complies	Complies	
	<a href="#">Axis (Mobile), AL</a>	1.02	scope not reported	Complies	Complies						Complies		Complies			Complies	Complies	Complies		
	<a href="#">Portland, OR (CAN)</a>	1.44	scope not reported	Complies	Complies											Complies	Complies	Complies		
Hollow Structural Sections	Company	Location	Cradle-to-Mill-Gate	Cradle-to-Fabricator-Gate	1.71	1.99	TBD	TBD	TBD	No Feasible Limit	1.778	No Feasible Limit	1.854	No Feasible Limit	1.898	TBD	2.57	2.99	3.00	
	Atlas Tube	<a href="#">Birmingham, AL</a>	1.58	1.85	Complies	Complies							Complies		Complies		Complies	Complies	Complies	
		<a href="#">Blytheville, AR</a>	1.65	1.92	Complies	Complies											Complies	Complies	Complies	
		<a href="#">Chicago, IL</a>	1.62	1.89	Complies	Complies											Complies	Complies	Complies	
		<a href="#">Hartsville, OH</a>	1.78	2.06														Complies	Complies	Complies
		<a href="#">Plymouth, MI</a>	1.55	1.81	Complies	Complies							Complies		Complies		Complies	Complies	Complies	
	Bull Moose	<a href="#">Burlington, ON</a>	1.75	scope not reported													Complies		Complies	
		<a href="#">Casa Grande, AZ</a>	2.09	scope not reported													Complies		Complies	
		<a href="#">Chicago Heights, IL</a>	1.68	scope not reported	Complies												Complies		Complies	
		<a href="#">Elkhart, IN</a>	1.69	scope not reported	Complies												Complies		Complies	
		<a href="#">Gerald, MO</a>	1.82	scope not reported													Complies		Complies	
		<a href="#">Massville, OH</a>	1.72	scope not reported													Complies		Complies	
		<a href="#">Trenton, GA</a>	1.75	scope not reported													Complies		Complies	
	Manuichi Ameri	<a href="#">Santa Fe Springs, CA</a>	1.90	scope not reported													Complies		Complies	
	Manuichi Leavitt	<a href="#">Chicago, IL</a>	1.72	scope not reported													Complies		Complies	
	MOST	<a href="#">Portland, OR</a>	1.62	scope not reported	Complies												Complies		Complies	
	Nucor	<a href="#">Birmingham, AL</a>	1.54	1.81	Complies	Complies											Complies	Complies	Complies	
		<a href="#">Chicago, IL</a>	1.17	1.40	Complies	Complies				Complies		Complies		Complies			Complies	Complies	Complies	
		<a href="#">Decatur, AL</a>	1.59	1.86	Complies	Complies											Complies	Complies	Complies	
		<a href="#">Marselles, IL</a>	1.35	1.60	Complies	Complies				Complies		Complies		Complies			Complies	Complies	Complies	
		<a href="#">Trinity, AL</a>	1.59	1.86	Complies	Complies											Complies	Complies	Complies	
	Searing Indust	<a href="#">Cucamonga, CA</a>	1.69	scope not reported	Complies												Complies		Complies	
		<a href="#">Cheyenne, WY</a>	1.61	scope not reported	Complies												Complies		Complies	
Vest, Inc	<a href="#">Vernon, CA</a>	1.70	scope not reported	Complies												Complies		Complies		

# What does this mean?



W21x50



W21x50



W21x50



W21x50



W21x50



W21x50



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# 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](https://aisc.org/partnerprogram)



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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](mailto:membership@aisc.org).

<u>Name</u>	<u>Location</u>	<u>Assigned Contact</u>	<u>Status</u>
High Steel Structures, Inc.	3501 W. 4th St. Williamsport, PA 17701-4113		<a href="#">Ready to Begin</a>
High Steel Structures LLC	1915 Old Philadelphia Pike Lancaster, PA 17602		<a href="#">Ready to Begin</a>



**SUSTAINABILITY  
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## 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

<a href="#">Description</a>	<a href="#">Training</a>	<a href="#">Status*</a>
Fabricated Structural Steel and Sustainability 101	<a href="#">Access Training</a>	Complete
Fabricator Environmental Impacts	<a href="#">Access Training</a>	Complete
External Requirements	<a href="#">Access Training</a>	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

<a href="#">Company</a>	<a href="#">City</a>	<a href="#">State or Province</a>	<a href="#">Data Year</a>	<a href="#">Status</a>	<a href="#">Submission</a>	<a href="#">Report</a>
Metals Fabrication Company, Inc.	Spokane	WA		Not Started	<a href="#">Start Submission</a>	

## 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

<a href="#">Goal</a>	<a href="#">Goal Percent</a>	<a href="#">Last Updated</a>	<a href="#">Link</a>	<a href="#">Report</a>
			<a href="#">Create Goal</a>	



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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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You choose the goal type:

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



FREE Energy Audits  
\$\$\$ Savings



FREE Education  
Practical Options



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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

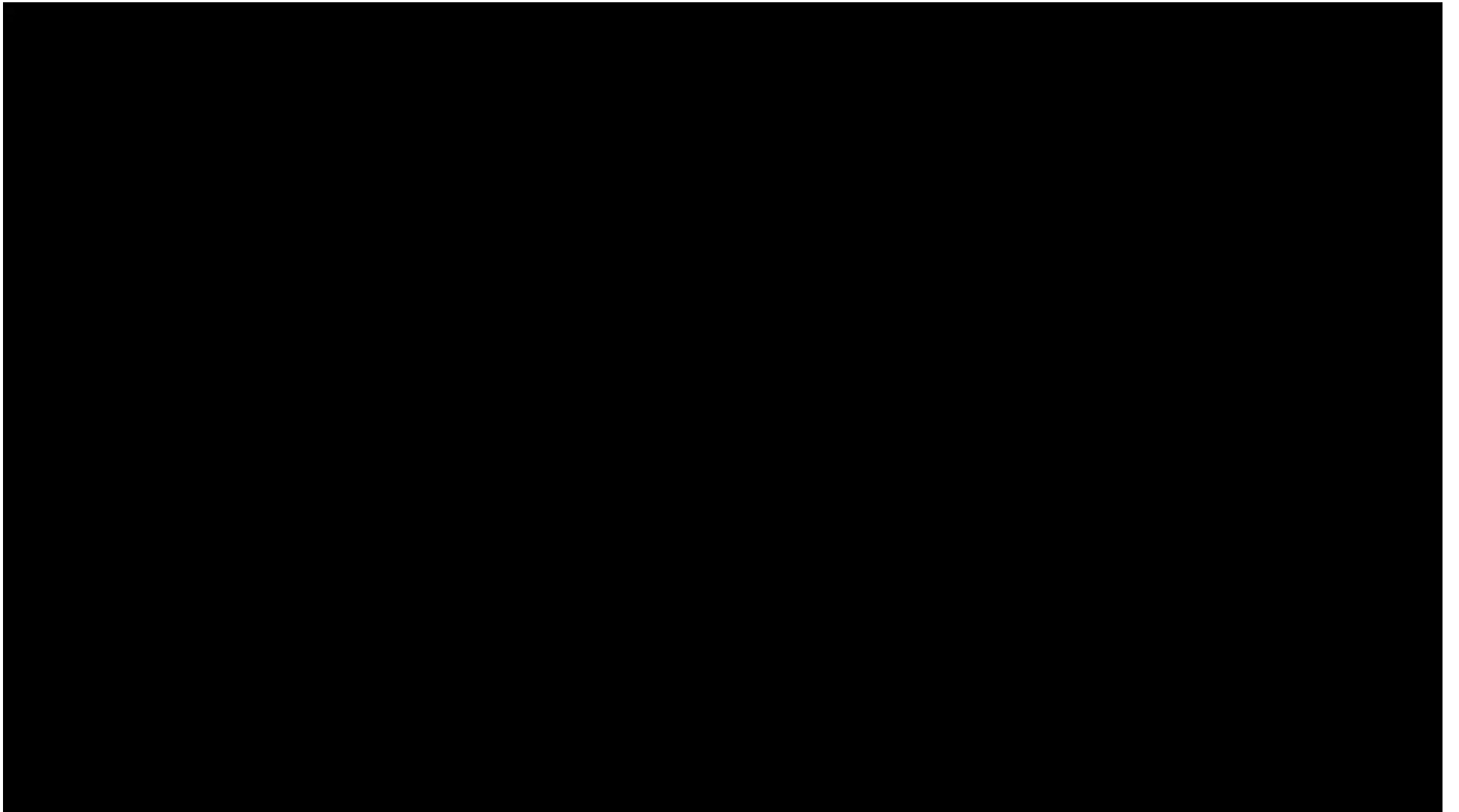
# You Get: A Customized Report for your Corporate Clients

**How long will this take? < 2 hours**

**What does it cost? Free!**



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