



American Iron and Steel Institute

PROFILE



STEEL *has been and will
continue to be the driving force
behind American innovation
and manufacturing excellence.*



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History of the **STEELMARK**

AISI's Steelmark is the renowned brand to promote steel made in America. The three hypocycloids mean: steel lightens your work, brightens your leisure and widens your world. They also represent the three materials used to produce steel: yellow for coal, orange for iron ore and blue for steel scrap.

The Steelmark, originally developed by U. S. Steel in the 1950s, was later provided to AISI for industry-wide use. In 1962, a steel executive suggested to the Pittsburgh Steelers that they use it on their helmets, and with that, the Steelmark blazed its way to national recognition. Today it is one of America's great iconic images.



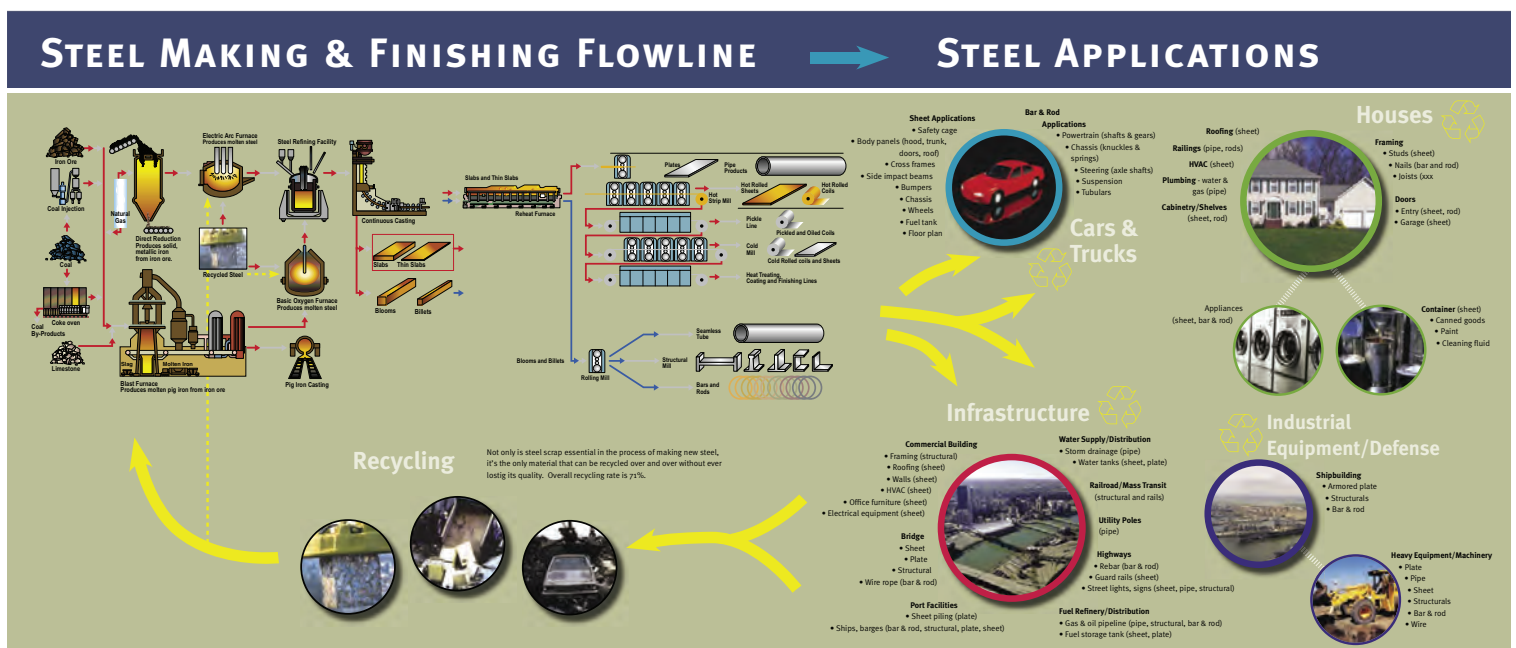
THE MAKING of Steel



Innovation and technology have transformed America's steel industry into one of the world's most competitive, sustainable and environmentally progressive industries. Steel productivity has more than tripled since the early 1980s — making America stronger at home and abroad. Steelmaking is a process which has been transformed by modern technology. Today there are two main processes to create steel: The Basic Oxygen Furnace (BOF) and the Electric Arc Furnace (EAF). BOF steelmaking begins with the blast furnace, in which iron ore is combined with coke, limestone and a blast of compressed hot air to produce molten iron, often referred to as pig iron. The BOF then combines the pig iron, scrap steel and flux in a furnace, which then has oxygen blown into it to remove carbon.

The first electric arc furnaces (EAFs) appeared in the late 19th Century. The use of EAFs has expanded and now accounts for nearly two-thirds of steel production in the United States. The EAF is different from the BOF as it uses electrodes to create electric arcs to melt scrap steel or other iron material.

BELOW: Graphic courtesy of the American Iron and Steel Institute.



ECONOMIC IMPACT

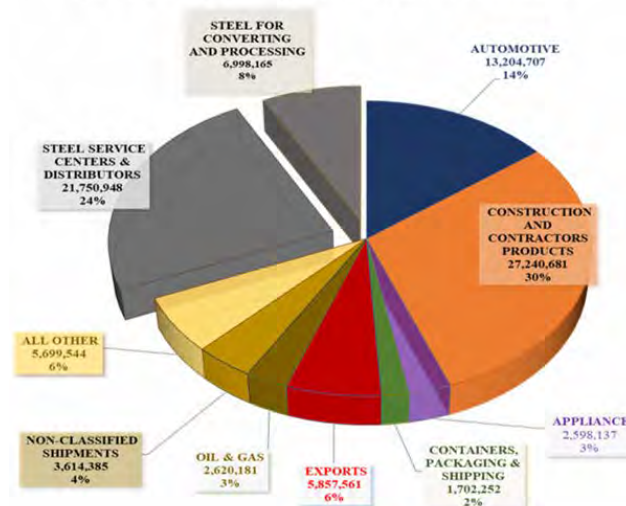
of the American Iron and Steel Industry

The American iron and steel industry is a dynamic part of the U.S. economy, accounting for more than \$520 billion in economic output and supporting nearly two million jobs when considering the direct, indirect (supplier) and induced impacts. According to a recent analysis conducted by the prominent research firm John Dunham & Associates (JDA) and commissioned by the American Iron and Steel Institute, the iron and steel industry generated an estimated \$56 billion in federal, state and local taxes and industry-supported workers earned more than \$130 billion in wages and benefits.

The results illustrate why strong, pro-manufacturing policies are needed to ensure the sustainability of an industry with such an impactful employment base and robust economic footprint. Please visit our comprehensive analysis and state-by-state breakdown of the economic impact of the American steel industry at www.steel.org/economicimpact.



2022 Domestic Shipments by End Use Market



Source: AISI

2022 U.S. Steel Industry STATISTICAL HIGHLIGHTS	
Steel shipments	89.5 million tons
Imports (finished)	25.3 million tons
Exports	8.3 million tons
Apparent steel demand	106.4 million tons
Steel mill employment	136,200*

Source: American Iron and Steel Institute

*Based on U.S. Department of Labor December 2022 monthly employment data.



TOP: The USS Gerald R. Ford was commissioned in 2017 and constructed using ArcelorMittal steel.

Photo courtesy of Huntington Ingalls Industries.

BOTTOM: The mine-resistant ambush-protected vehicles (MRAPs) utilize special armor steels that are produced and developed in America.

Photo courtesy of Stockrek Images, Inc.

OPPOSITE: Power grid infrastructure, high voltage substation metal structure in Texas

[RobertCoy]/Adobe Stock

NATIONAL SECURITY and Critical Infrastructure

Steel is essential to our national security. Every military platform and weapon system is dependent on American-produced steel. National security also depends on critical infrastructure like transportation, public health and safety, energy, and the power grid—all of which rely heavily on steel.

In 2017, actions under Section 232 of the Trade Expansion Act imposed 25 percent tariffs (or in some instances quotas) on imported steel, which was intended to help restore the domestic steel industry to a sustainable capacity utilization rate of 80 percent or higher over a meaningful period of time. This helped ensure the industry's continued ability to meet national security needs.

The tariffs are working. Foreign steel imports have decreased since the tariffs were enacted many plants restarted, capacity utilization increased and steel workers went back to work. The steel industry is now be on track to maintain our essential contributions to national security and critical infrastructure. And steel using industries will benefit from having a stable supply of domestic steel.



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STEEL INDUSTRY

Leads the Way

Steel's versatility and the innovation of its producers and users have helped to establish steel as the material of choice particularly in energy, transportation and construction. The steel industry continues to lead in revolutionary developments: new steel grades for the automotive market; iron and steelmaking technologies that will significantly reduce energy and greenhouse gas emissions; advances in steel building construction; and energy transmission and development — to name a few. Since 1990, the industry has reduced its energy intensity and greenhouse gas (GHG) emissions intensity by 35 and 37 percent, respectively.

Our industry is a leader in quality, efficiency and productivity. Labor productivity in the U.S. has seen a five-fold increase since the early 1980s, going from an average of 10.1 man-hours per finished ton of steel to an average of 1.9 man-hours per finished ton of steel in 2022.



The United States is recognized as the most energy efficient of any major steel producing country, according to the Department of Energy.





Each year, more steel is recycled than paper, plastic, aluminum and glass—combined.

Global Leader In

SUSTAINABILITY

The American steel industry is a global leader in sustainability, responsibly producing steel that advances modern living, while staying focused on economic, environmental and social sustainability. Innovative grades of steel enable manufacturers to do more with less, promoting material efficiency and maintaining recyclability .

Each year, more steel is recycled than paper, plastic, aluminum and glass—combined. The steel industry is recycling three-quarters of the steel coming from the packaging market, nearly 100 percent of automobiles at end of their useful lives, and more than 90 percent of steel from infrastructure, appliances and construction.

The American steel industry is the cleanest of the leading steel industries in the world. Of the major steel-producing countries, the U.S. has the lowest CO₂ emissions per ton of steel produced. By contrast, Chinese steel production creates carbon emissions that are nearly twice that of the U.S. per ton of steel produced. The global steel industry contributes eight percent of total world greenhouse gas (GHG) emissions, whereas the U.S. steel industry only accounts for one-to-two percent of total U.S. GHG emissions.

There are several reasons for the American steel industry's leadership in decarbonization. A key factor is that the American steel industry has adopted electric arc furnace (EAF) technology at a much more accelerated rate than the global industry. Nearly 71 percent of the steel produced in the U.S. in 2020 was from EAFs, compared to only 26 percent globally. In addition, the American steel industry operates blast furnaces that are among the most carbon efficient in the world. Integrated steel mills in the U.S. are almost entirely fed by domestically sourced iron ore pellets compared to CO₂-intensive sintered ore used in China and elsewhere, resulting in significantly lower emissions of CO₂, as well as lower emissions of NO_x, SO₂ and particulate matter.

Also, the emissions factors associated with the energy mix used for steelmaking in the United States are lower than in other steel-producing locations in the world, with much more reliance on natural gas and renewable energy. This cleaner energy mix helps produce the lowest CO₂ emissions steel. The American steel industry is continuing to invest in clean energy to provide the electricity needed to run our mills—a number of steel producers in the U.S. have announced several projects that employ renewable energy to supply all or most of specific facilities' energy requirements.

The steel industry in the U.S. also continues to make other key investments to further decrease its carbon emissions and advance its leadership position on sustainability. American steelmakers have made investments to increase the use of direct reduced iron (DRI) and hot briquetted iron (HBI), which can lower emissions for both integrated blast furnace-basic oxygen furnace steel mills and EAF steel mills. Additionally, new DRI and HBI facilities are being designed and have recently been built to be hydrogen-ready once clean hydrogen is available on an industrial scale and commercially viable.



AISI *POLICY PRIORITIES*



ABOVE LEFT: Senator Patty Murray hosting a round table at Nucor in Seattle, WA.

ABOVE RIGHT: Steel workers at Cleveland-Cliffs plant in Dearborn, MI.



TOP: Transportation Secretary Pete Buttigieg, GSA Administrator Robin Carnahan, and White House Deputy National Climate Advisor Ali Zaidi visit Cleveland-Cliffs' Toledo Direct Reduction plant

BOTTOM: Steel workers at the ArcelorMittal plant in Calvert, AL

TRADE

Foreign government subsidies and other market-distorting policies have resulted in massive global steel over capacity, more than approx. 632 million metric tons – nearly eight times U.S. production in 2022 – which distorts the global steel market and steel trade. To address this, the United States government must:

- ◆ Maintain and aggressively enforce the Section 232 trade actions on steel imports to protect our national security by ensuring a healthy and sustainable domestic steel industry;
- ◆ Continue to press China and other nations to eliminate steel overcapacity by ending their subsidies and other market-distorting policies that promote overcapacity;
- ◆ Enforce U.S. trade laws against injurious dumping and subsidies and use all available tools to address transshipment, circumvention and evasion of trade remedy measures;
- ◆ Modernize and strengthen trade agreements with allies; and,
- ◆ Implement a carbon border tariff program to level the playing field between cleaner American steel production and higher emitting foreign steel.



TOP: Director of Made in America at the Office of Management and Budget, Celeste Drake speaks at the 2022 AISI Annual Meeting in Washington, DC.

BOTTOM: Senator Todd Young (R-IN) speaks at the AISI Annual Meeting.



RIGHT: Steel industry executives at the 2022 Congressional Steel Caucus hearing.

RIGHT: US Trade Representative Katherine Tai and AISI President and CEO Kevin Dempsey at the 2021 AISI Annual Meeting.

BELOW: AISI's Environment Committee touring the Cleveland Pellet Terminal and the William G. Mather Great Lakes freighter formerly owned by Cleveland-Cliffs and now serving as a ship museum after its decommissioning in 1980



ENERGY

The production of steel is inherently energy intensive. The affordability and reliability of key energy resources, including electricity, natural gas and coal, are essential to the industry's competitiveness. Regulations of energy providers should not undermine the competitiveness of U.S. manufacturers or limit production of domestic energy sources. The United States needs policy measures that facilitate investment in our national energy infrastructure, including production, distribution, transmission and storage projects, in order to maintain a robust economy and promote domestic industry.

ENVIRONMENT

American steel producers are continually seeking to reduce our environmental footprint even while increasing production of the advanced and highly recyclable steel that our economy needs. These efforts have yielded dramatic improvements in air emissions, water discharges and waste disposal over the past several decades. AISI continues to work with EPA to advocate for federal regulations that preserve and protect our shared environment, but that do so without undermining our industrial competitiveness and include careful consideration of cost-benefit analysis.



Regulations of energy providers should not undermine the competitiveness of U.S. manufacturers or limit production of domestic energy sources.

BELOW: EPA Administrator Andy Wheeler and AISI President Kevin Dempsey.





The United States is in need of increased, long-term funding for improvements to the nation's transportation, water, energy and other critical infrastructure.



TOP: Photo courtesy of SSAB Americas.

BOTTOM: AISI member companies and the Great Lakes region as a whole depend on the Soo Locks' ability to regulate the flow of shipping traffic through the St. Mary's River to ensure the safe transportation of iron ore to blast furnace facilities in the lower part of the region. More than 75 million tons of cargo annually passes through the Locks, including nearly all of the iron ore pellets that are essential for the American steel industry throughout the Great Lakes.

[Jacob]/Adobe Stock

TRANSPORTATION & INFRASTRUCTURE

Investment in key transportation and infrastructure facilitates broad economic growth and directly enhances the competitiveness of the domestic steel industry. The United States is in need of increased, long-term funding for improvements to the nation's transportation, water, energy and other critical infrastructure. Federal funding should be accompanied by reforms that streamline permitting to speed approval of large projects and should ensure that iron and steel used for the nation's infrastructure is produced in the United States. AISI work on transportation policy reflects that these "Buy America" mandates for purchase of American-made iron and steel should also be expanded and strengthened.



Associate Administrator for Infrastructure Hari Kalla speaks at the 2022 AISI Annual Meeting.

WORKFORCE POLICY

The steel industry is committed to ensuring safety and health at our industrial workplaces. AISI member companies have made substantial efforts to decrease the number and frequency of workplace incidents and continue to work through AISI to share information and best practices to meet this shared goal. Some regulations may misdirect priorities and create unnecessary costs for employers that prevent optimum workplace safety and health benefits from being realized. Policymakers should instead commit to a cooperative approach wherein federal agencies, employers and employees work in partnership to advance work-place safety and health.



U.S. Secretary of Energy, Jennifer Granholm and Rep. Marcy Kaptur (D-OH) visit Cleveland-Cliffs' Direct Reduction Iron plant.



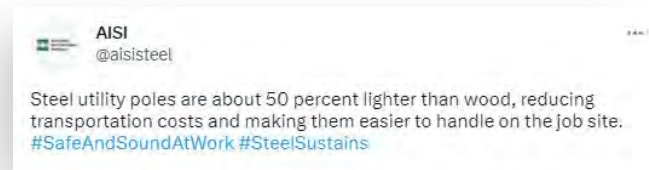
Reps. Rick Crawford (R-AR) and Frank Mrvan (D-IN) speak at the February 2023 AISI Board Meeting.



AISI IN THE NEWS

AISI is widely seen as a resource to educate the media, provide data and help shape public opinion on the positions of the steel industry.

AISI was mentioned in the media more than 5000 times over the past year. The Institute engages in various social media platforms, supporting social media campaigns such as #FixTheSooLocks and #AmericaSteelStrong, and generating social media presence for steel champions on Capitol Hill through our #SteelBriefs campaign. AISI was also recognized by the Occupational Safety and Health Administration (OSHA) for “efforts to promote a safety and health program in every workplace” during the annual Safe + Sound Campaign on Twitter.



"The American steel industry is a global leader in clean steel production. As such, I take issue with the premise of the Jan. 31 news article." — Kevin Dempsey, @aisisteel. wapo.st/3Z0f96G



"Steel plays a critical role in solving climate-change challenges in building construction," writes AISI president and CEO Kevin Dempsey in a @WSJopinion letter to the editor.



wsj.com
Opinion | Who Says It Is More Sustainable to Build With Wood Than Steel? Harvesting destroys forests, releasing carbon dioxide.

AUTOMOTIVE

With more than 200 steel grades available, today's steel grades are as much as six times stronger than the steels of a decade ago and three to four times stronger than the latest aluminum alloys on the market. The added strength of advanced high strength steel (AHSS) allows automakers to deliver vital performance and safety benefits with lightweight products using their existing manufacturing infrastructure and eliminating major manufacturing cost penalties associated with the introduction of alternative materials.

AISI works with automotive customers to promote the next generation of advanced high-strength steels that provide high-value solutions to meet the fuel economy and performance requirements of future vehicles. The goal of the AISI automotive program is to keep steel the material of choice in body and chassis applications through its advantages in performance, mass reduction, sustainability and value.



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AISI maintains an annual and influential presence at the North American International Auto Show and Great Designs in Steel.



LEFT: Electric utilities are using steel poles to harden their distribution systems because they are reliable in severe weather, easy to install, require minimal maintenance, and resistant to fire, rot, termites and woodpeckers.

BELOW: A modular system using press-brake-formed steel tub girders was used to replace the Cannelville Road Bridge in Muskingum County, OH. The project was set by an Ohio crew and completed in just 26 days, with an expected service life of more than 100 years.



CONSTRUCTION

Steel is an essential material for the building construction and transportation/infrastructure sectors; valued for its durability, sustainability, reliability, cost-effectiveness and design versatility.

Steel structures are energy-efficient, low-maintenance and resilient, performing well in natural disasters such as hurricanes and earthquakes, and in extreme events like fire and blast. As a building material, steel meets sustainability requirements in standards such as the International Green Construction Code and in green building rating systems like USGBC's Leadership in Energy and Environmental Design (LEED), where steel products can help earn points toward LEED v4 certification. Steel is continuously recyclable and can be repurposed at end of life into any other steel product. AISI develops and maintains cold-formed steel framing standards used extensively in North America and throughout the world.

Short span bridges less than 140 feet make up most of the U.S. bridge inventory, and many need to be repaired or replaced. Steel solutions provide initial and life cycle cost advantages. An innovative modular system using shallow steel press-brake tub girders offers significant cost and time savings for counties and state departments of transportation. This system is easy to fabricate, uses accelerated bridge construction practices and can often be installed with local crews in a single day. The expected life span for these bridges is 100 years or more. The steel industry also offers complimentary web-based design software for customized short span steel bridges that is available at www.espan140.com.

BELOW: Amish Sawmill Bridge in Buchanan County, IA.

INSET: Cold-formed steel provides the highest strength-to-weight ratio of any building material and is noncombustible, resulting in safer structures and protection for occupants, owners and first responders.



THE AMERICAN IRON AND STEEL INSTITUTE



Founded in 1855 as the American Iron Association, the American Iron and Steel Institute (AISI) has represented the steel industry for more than 150 years. Headquartered in Washington, D.C., AISI advocates on behalf of its member companies for public policies that support a globally competitive American steel industry. Never has it been more critical than it is today for the industry to speak out with a unified voice on major policy issues that are impacting American manufacturers.

AISI's mission is to influence public policy, educate and shape public opinion in support of a strong, sustainable American steel industry committed to manufacturing products that meet society's needs.

To achieve its mission, AISI:

- ◆ **FOCUSES ON THE ADVOCACY** of public policy priorities central to the steel industry where AISI can make an impact on issues where there is strong member alignment.
- ◆ **INFORMS AND EDUCATES** opinion leaders about the North American steel industry's strategic importance to national and economic security.
- ◆ **COMMUNICATES THE BENEFITS** that the industry's technological advances are making to the health and safety of its workforce and to the environment.
- ◆ **COLLECTS AND PROVIDES INDUSTRY DATA** to policymakers, company personnel and the public regarding steel operations, production, energy efficiency, shipments, import/export levels and consumption.
- ◆ **PURSUES TECHNOLOGY ADVANCEMENTS** through collaborative research and development.
- ◆ **ASSISTS MEMBER COMPANIES** in attracting and retaining talent.
- ◆ **ADVANCES THE COMPETITIVE USE** of steel in traditional and growth markets.



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The New Steel 