



NUCOR STEEL MILLS SEGMENT

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# INTRODUCTION

Nucor Corporation ("Nucor"), a Delaware corporation incorporated in 1958, and its affiliates manufacture steel and steel products, both by recycling ferrous scrap and converting other high purity iron units. Nucor is North America's largest recycler, using scrap steel as the primary raw material in producing steel and steel products using electric arc furnaces ("EAFs") paired with highly efficient continuous casting and automated rolling mills.

Nucor also produces direct reduced iron ("DRI") for use in its steel mills. Through our subsidiary, The David J. Joseph Company, and its affiliates, we also process ferrous and nonferrous metals and broker ferrous and nonferrous metals, pig iron, hot briquetted iron and DRI. Almost all of Nucor's operating facilities and customers are in North America.

This report presents information in alignment with the guidelines of the Sustainability Accounting Standards Board (SASB) — Iron and Steel Producers sector, and covers our Steel Mills segment of operations, which represents most of our impacts. The information and data provided here addresses the requirements of the SASB guidelines to the maximum extent possible, considering data availability. This document is complementary to and expands upon our sustainability reporting and our public filings with the Security and Exchange Commission.

For further information about Nucor and our sustainability efforts, please also refer to Nucor's most recent Corporate Sustainability Report available at: <u>https://nucor.com/environmental</u> and our inaugural TCFD (Task Force on Climate Related Financial Disclosure) report.

# **STEEL MILLS SEGMENT**

Nucor produces sheet steel (hot-rolled, cold-rolled and galvanized), plate steel, structural steel (wide-flange beams, beam blanks, H-piling and sheet piling) and bar steel (blooms, billets, concrete reinforcing bar, merchant bar and engineered special bar quality "SBQ") in its Steel Mills Segment. Nucor manufactures steel principally from scrap steel and scrap steel substitutes using EAFs, paired with continuous casting and automated rolling mills.

The Steel Mills Segment sells its products primarily to steel service centers, fabricators and manufacturers located throughout the United States, Canada and Mexico. In 2020, the Steel Mills Segment sold approximately 18,049,000 tons to outside customers. An additional 4,512,250 tons were shipped to the businesses comprising Nucor's steel products segment.

The data represented in the following table represents the total amount of steel produced at Nucor Steel Mills and includes sales to inside and outside customers. Also, the data includes steel mills located in North America only and does not include any production from equity method investments.<sup>4</sup>

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<sup>4</sup> For purposes of SEC reporting, Nucor's Steel Mills Segment includes Nucor's equity method investments in NuMit LLC ("NuMit") and Nucor-JFE Steel Mexico, S. de R.L. de C.V. ("Nucor-JFE").

ACTIVITY METRICS FOR NUCOR					
Raw Steel Production	2020	2019	2018	SASB Code	
Metric tons cast (t)	20,300,000	20,700,000	22,500,000	EM-IS-000.A	
Percentage - Basic Oxygen Furnace Processes	0	0	0	EM-IS-000.B	
Percentage - Electric Arc Furnace Processes	100	100	100	EM-IS-000.C	

Nucor does not own any BOFs or produce iron ore or coking coal.

GREENHOUSE GAS EMISSIONS				
	2020	2019	2018	SASB Code
Scope 1 Greenhouse Gas Emissions (Metric tons CO <sub>2</sub> e) <sup>#</sup>	4,700,000	4,400,000	4,800,000	EN4 10110 a 1
Percentage covered under emissions- limiting regulations	Not available	Not available	Not available	EM-151108.1

<sup>#</sup> 2020 emissions were calculated in line with guidance published by U.S. Environmental Protection Agency EPA (EPA), Part 98 while 2019 and 2018 emissions were calculated according to the Worldsteel methodology.

Currently, the EPA does not regulate GHG emissions under a national emission standard for iron and steel production. However, individual steel mills are subject to regulations limiting GHG emissions from specific emission units on a case-by-case basis through the New Source Review permitting program.

Annual increases and decreases in Scope 1 GHG emissions are directly related to production output. Each individual steel mill evaluates energy efficiency measures that can reduce per unit GHG emissions and overall GHG emissions totals. Per unit GHG emissions can increase during periods of lower capacity utilization and may also increase as Nucor's product mix shifts more toward steels with higher value uses. To the extent that these more value-added products gain domestic market

share from imported steel or domestic steel made via the basic oxygen furnace (BOF) process, Nucor believes that the overall GHG footprint of steel consumed in the United States will continue to decline.

#### DISCUSSION OF OUR STRATEGY TO MANAGE SCOPE 1 EMISSIONS (EM-IS-110A.2)

Today, Nucor's EAFs produce the most diverse range of steel shapes and grades in the U.S. with some of the lowest GHG emission rates and highest energy efficiencies per ton of steel of any carbon steel producer worldwide. EAFs are the cleanest production process for making steel and use significant quantities of recycled content. Adopting EAF technology for steelmaking preserves natural resources and lowers Scope 1 emissions associated with steelmaking. In addition, Nucor's performance driven culture and incentive compensation system consistently motivate our teammates to find new ways to safely produce more high-quality products while using less energy, as this can be expected to lower costs and enhance profitability.

These attributes are among the core strengths of our business model. They result in a more variable, lower, cost base than many of our competitors and this has enabled us to grow our market share over time. Currently, we are seeing greater interest in our EAF produced steels among manufacturers, construction contractors, engineers, architects and government agencies. There is an increased appreciation of our products for their lower GHG intensity, high recycled content and for their endof-life recyclability. In some cases, GHG intensity and recycled content requirements are being incorporated into product specifications by our customers

For the foreseeable future, we expect that the steel sector's global GHG emissions will remain difficult to abate, and that our EAF-based approach will remain the most viable means of producing steel for its efficiency, flexibility and environmental attributes. Our efforts to reduce our GHG emissions intensity and our impact on climate change are focused primarily on becoming even more energy efficient and less carbon intensive in all aspects of our business. We will focus on reducing not only our Scope 1 and Scope 2 emissions, but also our Scope 3 emissions, especially those associated with the carbon bearing raw materials we consume in our steelmaking operations. We will:

- continue to invest substantial capital to modernize our operations;
- support the continued growth and development of clean power generation in the U.S.;
- explore the feasibility of capturing and storing our CO2 emissions;
- monitor, evaluate, and where appropriate, invest in promising newer technologies in steelmaking that may eventually enable step change reductions in the industry's GHG intensity.

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### **OUR COMMITMENTS**

Nucor has committed to a 35% combined reduction in steel mill Scope 1 and Scope 2 GHG intensity by 2030 using 2015 emissions as a baseline. This goal will take Nucor's steel mill CO<sub>2</sub> emissions down to 77% less than today's global steelmaking average.

- In addition to Scope 1 and 2, Nucor will continue to publicly disclose and reduce its Scope 3 emissions intensity.
- Nucor has already achieved and will continue to meet the Paris Agreement and below Two Degree Scenario based on the GHG sector-based benchmarks established in 2021 by the Transition Pathways Initiative (TPI).<sup>5</sup>
- Beyond 2030, we are committed to continuing reductions in steel mill carbon intensity toward net zero-emission steel at scale.

## **EMERGING TECHNOLOGIES**

Nucor has been an early adopter and industry innovator by embracing and developing transformational new technologies and we intend to continue to investigate and explore transformative technologies with the aim of reducing ours and the entire industry's GHG intensity. Our management is actively engaged in our efforts to reduce carbon and keeps abreast of developments globally that may enable the production of steel with lower levels of GHG emissions. We are confident that, given our legacy of driving transformational technological innovation in our industry, Nucor will be well-positioned to adopt promising emerging technologies as they are demonstrated technically and made commercially available.

We are encouraged by technological developments over the past several years that have significantly improved the cost competitiveness and reliability of carbon-free clean power generation and storage. As these technologies continue to improve, we expect that an increasing portion of our electrical load will be supplied from carbonfree resources, and we are taking concrete steps to help support the transition of the U.S. power grid to a greater reliance on these technologies. As the national grid migrates to a lower carbon technology, Nucor will benefit from this transition significantly compared to integrated competition that relies heavily on fossil fuels like coke and natural gas. We are also optimistic about the continuing robust demand we see for our steel and steel products to enable the ongoing buildout of clean power generation and transmission assets in the U.S. We believe it is likely that meeting the challenges of climate change will require fully developing Carbon Capture Utilization and Storage (CCUS) technology and we are actively exploring the implementation of this technology in our operations. Currently we are considering a carbon sequestration project that would reduce our annual  $CO_2$  emissions by approximately 600,000 tons. Going forward, we will continue to evaluate other carbon capture technology that involves the capture of carbon within cement and concrete as another meaningful way to reduce our Scope 1 emissions intensity.

Nucor's carbon reduction strategy also includes the evaluation of substitutes for carbon, an essential raw material of ours. We are currently assessing the viability of substituting carbon injection with biomass or other recycled content. Within our melting strategy, we are exploring melting steel alloyed with ferrovanadium. This process confers several environmental benefits, including both reduced energy requirements and lower emissions of environmental pollutants.

Finally, we have established a multi-disciplinary team to study Low-Emission Technologies. Among the innovations the team is evaluating are: biomass, scrap preheating,  $CO_2$  consumption by algae. To this point we have not identified solutions that are fully developed enough to be technically and commercially viable in the near term.

We plan to continue allocating resources to evaluating potential technological innovations that show promise, and we are also considering a limited number of investments to support these initiatives and better position Nucor to benefit from any breakthroughs.

AIR EMISSIONS			
EM-IS-120a.1:	2020	2019	SASB Code
Carbon Monoxide (CO), in metric tons	13,300	14,100	
Nitrogen Oxides (excluding N₂O), in metric tons	3,000	3,400	
Sulfur Oxides (SOX, as SO <sub>2</sub> ), in metric tons	2,000	1,800	
Particulate Matter (PM10), in metric tons	1,500	1,300	EN 10 100 1
Manganese (MnO)		*Limited Data Availability	EM-15-1208.1
Lead (Pb), in metric tons	2.6	2.2	
Volatile Organic Compounds (VOCs), in metric tons	760	970	
Polycyclic Aromatic Hydrocarbons (PAHs )		*Limited Data Availability	

\* The air emissions estimates in this disclosure attempt to quantify emissions from all regulated activities and sources of emissions at the steel mills. Sources of emissions include production and process emissions, emissions from transportation of materials, including roadway emissions, and ancillary equipment emissions. The estimated emissions do not include emissions from office buildings and sources of emissions not subject to regulation under the Clean Air Act.

The air emissions data below is a compilation of information from each individual Nucor steel mill. As required by the Clean Air Act Title V operating permits, the air emissions data reflects information provided to the regulatory agencies pursuant to 40 CFR 70.6 and 40 CFR 71.6. The air emissions data provided in the table is not intended to be used for regulatory purposes.

If available, emissions data obtained from continuous emissions monitors (CEMs) is included in this disclosure. Absent CEMs data, the emissions were determined based upon performance test data, engineering calculations, material analyses and mass balance equations.

ENERGY MANAGEMENT				
	2020	2019	2018	SASB Code
Total Energy Consumed (GJ)#	112,000,000	112,000,000	120,000,000	
Percentage Grid Electricity (%)	47.3	49.1	48.3	EM-IS-130a.1
Percentage Renewable	Not available	Not available	Not available	
Total Fuel Consumed (GJ)*	38,000,000	37,000,000	41,000,000	
Percentage Coal	0	0	0	FM 10 100 - 0
Percentage Natural Gas	>95	>95	>95	EWI-15-13Ua.2
Percentage Renewable <sup>+</sup>	0	0	0	

\* Fuel consumption data only includes natural gas.

# The total energy consumed by Nucor includes purchased electricity, natural gas, oxygen, and carbon raw material inputs. Electricity is the primary energy source for the scrap melting process.

<sup>+</sup> Nucor does not currently purchase renewable energy beyond that which is already part of the grid mix in the locations where we operate.

Natural gas is the primary fuel for the reheat furnace operations. Additionally, natural gas is consumed as a fuel for ladle preheaters and comfort heat. Oxygen is also used as a fuel source in furnace operations. For the purposes of this disclosure, natural gas and oxygen are quantified for the "total fuel consumed" reporting metric. Nucor does not consume coal as a source of fuel.

Diesel, biodiesel and gasoline, are fuels that utilized for generators and portable welders. Acetylene is used for torch cutting operations. These fuels are minimal in comparison to the consumption of natural gas and oxygen and are not included in the fuel calculation. Additionally, small amounts of bio-diesel and other fuels considered renewable may be included in the Total Fuel Consumed data but are not tracked separately.

WATER MANAGEMENT				
	2020	2019	2018	SASB Code
Total Fresh Water Withdrawn Thousand cubic meters (m³)	23,000,000	27,000,000	25,000,000	
Percentage Recycled	100	100	100	EM-IS-140a.1
Percentage of Operations with High or Extremely High Water Stress	0	0	0	

Steel making requires significant water for cooling both products and machinery. To reduce water consumption and preserve existing resources, Nucor operates extensive water treatment systems. Cooling towers and oil/water separation systems allow water to be recycled 8-10 times in multiple cascading systems. In addition, Nucor has invested in capital projects at Nucor facilities over the years that have been focused both on reducing water use and on developing stormwater retention ponds so that the retained water can be treated and used in our production processes.

No Nucor steel mill division is located in a High or Extremely High Water Stress Area.

WASTE MANAGEMENT				
	2020	2019	2018	SASB Code
Amount of solid waste generated, in metric tons*	386,000	352,000	386,000	
Amount of liquid waste generated, in cubic meters*	117,000	119,000	119,000	
Percent Hazardous Solid Waste	0.8	1.4	1.0	EM-IS-150a.1
Percent Hazardous Liquid Waste (%)	1	1	1	
Percent Recycled Solid Waste (%)	99.2	98.6	99.0	
Percent Recycled Liquid Waste (%)	99	99	99	

\*Solid waste and liquid waste generated include only EAF dust and spent pickle liquor respectively. Nucor recycles both and this is accounted for in the percent recycled calculation.



While Nucor's reliance on EAF technology means that it recycles more than 20 million tons of ferrous scrap that might otherwise be landfilled, its process does produce some amount of waste. However, the two primary sources (on a volume basis) of waste generated by Nucor EAF operations are themselves considered valuable commodities and are recycled for further uses and applications. These are steel slag and particulate emissions collected by air pollution control equipment (baghouse dust). Approximately 99% of all such material is recycled by Nucor.

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WORKPLACE HEALTH AND S				
	2020	2019	2018	SASB Code
Total recordable incident rate (TRIR) – Recordables per 200,00 hours	1.10	0.95	1.79	
Total Fatality Rate	0	0	0	EM-IS-320a.1:
Near Miss Frequency Rate (NMFR) for (a) full-time teammates and (b) contract teammates	Not available	Not available	Not available	

\*Full-time Teammates – Steel Mills. Nucor does not track and report separate health and safety data on contractors.

Nucor operates mills that are registered to Occupational Safety & Health Management Systems, including OSHSAS 18001 and ANSI Z10. These divisions are investigating conversion to the new OHSMS, ISO 45001. All divisions have access to Safety & Health Professionals, both internally and externally, to ensure that best practices are learned and adhered to, and that every Nucor division complies with all legal requirements, including but not limited to OSHA, NFPA, FRA, DOT & ANSI.

Nucor facilities participate in the Occupational Safety and Health Administration's (OSHA) Voluntary Protection Program (VPP), which recognizes companies that voluntarily implement effective safety and health management systems and maintain injury and illness rates below national Bureau of Labor Statistics averages for their respective industries. For a workplace to achieve VPP status, the facility has to adopt and implement a comprehensive safety and health management system, and it also must apply to OSHA for inclusion. Currently, OSHA recognizes 24 Nucor facilities as OSHA VPP Sites, 11 of which are in the Steel Mills Segment.

Additional information relating to Nucor's safety management practices can be found at the following locations:

#### https://nucor.com/safety

https://nucor.com/additional-information/

#### EM-IS-430A.1. SUPPLY CHAIN MANAGEMENT

An ample supply of high-quality scrap and scrap substitutes is critical to support Nucor's ability to produce high-quality steel. Nucor's raw materials segment safely produces, sources, trades and transports steelmaking raw materials. Nucor steel mills consume ferrous scrap and virgin iron units (e.g., Direct Reduced Iron, Pig Iron, Hot Briquetted Iron) sourced and processed domestically and internationally by its raw materials segment. These materials represent Nucor's largest cost in producing steel. Nucor's raw materials investments are focused on creating an advantage for its steelmaking operations, through a global information network and a multipronged and flexible approach to metallics supply.

In 2020, DJJ processed 5 million tons of ferrous scrap and supplied a total of 20 million tons with the balance being sourced by DJJ's scrap brokerage operations. This scrap supply is almost entirely domestic and there is a well-established scrap supply chain in the U.S. comprised of participants ranging from sole proprietors to large well-capitalized players such as DJJ. DJJ has robust processes and systems in place to monitor scrap sourced and/or processed for dangerous materials (e.g., explosive, radioactive) and to eliminate and report on stolen scrap. DJJ frequently assists local law enforcement authorities in tracking stolen items back to their source.

Most of our virgin iron units are sourced internationally. We buy iron ore pellets to supply our DRI plants primarily from suppliers in Brazil. We import pig iron primarily from suppliers in Ukraine and Russia.

Our other major input is energy, which we source from utilities and the connected regional electricity grids and gas pipelines.

We use numerous methods to appraise the safety, human rights and environmental performance of our suppliers including in person visits and reputable third-party reporting. Nucor also has a Human Rights Policy and maintains several other potentially relevant policies including our Supplier Code of Conduct, Combatting Human Trafficking in Persons, Eliminating Forced Labor Policy and others. These policies can be accessed at the following **location**.

We believe Nucor's broad, balanced supply chain is an important strength which allows us to reduce the cost of our steelmaking operations, create a shorter supply chain and have greater optionality over our metallic inputs. Additionally, having a significant portion of our raw materials supply under our control minimizes risk associated with the global sourcing of raw materials, particularly since many scrap substitutes come from regions of the world that have historically experienced greater political turmoil. We believe the continued successful implementation of our raw material strategy, including key investments we have made in DRI production, as well as in the scrap brokerage and processing services performed by our team at DJJ, gives us greater control over our metallic inputs and thus helps us mitigate the risk of significant fluctuations in the availability and costs of critical inputs.