ENVIRONMENTAL PRODUCT DECLARATION

STEEL REINFORCING BAR AND MERCHANT BAR PRODUCTS

NUCOR STEEL SEATTLE, INC.
2424 SW ANDOVER ST. SEATTLE, WA 98106

NUCOR®

Nucor Steel Seattle, Inc. is the state of Washington's largest recycler, with the capacity to process over a million tons of scrap steel each year. Using an electric arc furnace, a steel recycling technology we helped to pioneer, we produce high-quality steel with 99.4% recycled content.

We recognize our role in protecting the environment and have demonstrated a long-standing commitment to do so. We have invested tens of millions of dollars in our Seattle facility to make it among the most efficient and environmentally responsible steel plants in the world.

In addition to being ISO14001 certified, we operate on an electric grid that is nearly carbon free

UL CERTIFIED
ENVIRONMENTAL PRODUCT DECLARATION
UL.COM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

NUCOR®

Steel Reinforcing Bar and Merchant Bar
Designated Steel Construction Product

According to ISO 14025, EN 15804 and ISO 21930:2017

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL ENVIRONMENT 333 PFINGSTEN ROAD NORTHBROOK, IL 60611
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	General Program Instructions v2.7 2022
MANUFACTURER NAME AND ADDRESS	Nucor Steel Seattle, Inc, 2424 SW Andover Street, Seattle, WA 98106
DECLARATION NUMBER	4790291557.101.1
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	Steel Reinforcing Bar and Merchant Bar, 1 metric ton
REFERENCE PCR AND VERSION NUMBER	Part A: Life Cycle Assessment Calculation Rules and Report Requirements (UL Environment, V3.2, 12.12.2018) and Part B: Designated Steel Construction Product EPD Requirements (UL Environment, V2.0, 08.26.2020).
DESCRIPTION OF PRODUCT APPLICATION/USE	Fabricated steel reinforcing bar and merchant bar used in construction
PRODUCT RSL DESCRIPTION (IF APPL.)	N/A
MARKETS OF APPLICABILITY	North America
DATE OF ISSUE	June 10, 2022
PERIOD OF VALIDITY	5 Years
EPD TYPE	Product-Specific
EPD SCOPE	Cradle to gate
YEAR(S) OF REPORTED PRIMARY DATA	2020
LCA SOFTWARE & VERSION NUMBER	GaBi v10.5.1.124
LCI DATABASE(S) & VERSION NUMBER	GaBi 2021.2
LCIA METHODOLOGY & VERSION NUMBER	TRACI 2.1 , EN15804

The PCR review was conducted by:	UL Environment PCR Review Panel epd@ul.com
This declaration was independently verified in accordance with ISO 14025: 2006. ☐ INTERNAL ☒EXTERNAL	Cooper McC Cooper McCollum, UL Environment
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	Trinity Consultants
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas P. Gloria, Industrial Ecology Consultants

LIMITATIONS

Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Accuracy of Results: EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

1. Product Definition and Information

Description of Organization

We aim to lead our industry in embracing environmental responsibility in all aspects of our business. For us, taking care of the environment is more than a corporate policy, it is a cultural responsibility shared by all of our teammates from the front line to management. And while this commitment is good for our business, it is even better for the communities where we live and work.

Nucor Steel Seattle operates a steel mill, founded in 1904, that is located in West Seattle. It currently produces predominantly steel reinforcing bar (steel rebar) and merchant bar quality (MBQ) products and employs approximately 330 teammates. We recognize our role in protecting the environment and have demonstrated a long-standing commitment to its welfare. We are Washington's largest recycler, recycling approximately 600,000 tons of scrap steel in 2020. Using an electric arc furnace steel recycling technology, we produce high-quality steel with 99.4 percent recycled content.

We have invested tens of millions of dollars into our Seattle facility to make it among the most efficient and environmentally friendly steel plants in the world.

This environmental product declaration (EPD) represents fabricated steel reinforcing bar and merchant bar produced via an electric arc furnace (EAF) from Nucor Corporation's mill in Seattle, Washington.

Product Description

Rebar assemblies are used in building and road/bridge projects where they are embedded in concrete. These products are rolled round deformed bars which are further detailed, cut, bent and/or tied into assemblies to prepare for installation. Additionally, MBQ shapes are angles, flats, rounds, channels and others used in a variety of building, industrial and equipment products. For use in the construction market, they are detailed, cut, drilled, bolted, welded and otherwise processed at the fabricator to be prepared for installation.

Steel rebar and MBQ produced by Nucor's Seattle mill are defined by the following ASTM standards:

- **ASTM A36/A36M-14** Standard Specification for Carbon Structural Steel
- **ASTM A529/A529-14** Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality [Grades 50, 55]
- **ASTM A709/A709M-16a** Standard Specification for Structural Steel for Bridges [Grades 36, 50]
- **ASTM A572/A572M-15** Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel [Grades 50, 55]
- **ASTM A615/A615M-16** Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement [Grades 40, 60, 75, 80, 100]
- **ASTM A706/A706M-16** Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement [Grades 60, 80]
- **ASTM F1554-15e1** Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength [Grade 55]
- **ASTM A588/A588M-15** Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance [Grade B]
- **ASTM A29/A29M-15** Standard Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought [Grades 1006, 1008, 1010, 1012, 1015, 1018, 1022, 1045, 1527, 4140]

- **CSA G40.20-13/G40.21-13** General Requirements for rolled or welded structural quality steel / Structural quality steel [Grades 44W, 50W, 55W]
- **CSA G30.18M-09 (R2014)** Carbon steel bars for concrete reinforcement [Grades 400R, 500R, 400W, 500W]

Product Average

The 2020 production data used in this EPD considers rebar and MBQ products produced by Nucor Steel Seattle during the year. Results are provided for the Seattle facility only.

Application

Rebar and MBQ products are used in a wide variety of applications. These products are rolled into a variety shapes such as rebar, flats, angles, rounds, square and specialty shapes that are detailed, cut, drilled, bolted, welded, and otherwise processed at the fabricator in order to prepare them for installation.

Declaration of Methodological Framework

The scope of the EPD is cradle-to-gate, including raw material extraction and processing, upstream transportation, and product manufacture (Modules A1, A2, and A3).

Technical Requirements

Technical data for the studied product can be found in the table below.

Table 1. Technical data for steel product

NAME	VALUE	UNIT
Density	7,800	kg/m^3
Melting point	1425-1450	°C
Electrical conductivity at 20°C	NA	% of IAC[8]
Thermal conductivity	NA	W/(m-K)
Coefficient of thermal expansion	NA	m/m-°C
Modulus of elasticity	NA	N/mm^2
Shear modulus	NA	N/mm^2
Specific heat capacity	NA	J/kg-°C
Hardness, Brinell Number	80-100	HB
Yield strength	250-550	N/mm^2
Ultimate tensile strength	410-655	N/mm^2
Breaking elongation	13-20	%
Chemical composition	Varies by ASTM Specification/Grade	% by mass

Properties of Declared Product as Delivered

The steel rebar and MBQ can be fabricated (i.e., cut or otherwise modified) by a fabricator or shipped directly to a job

site. This EPD addresses fabricated product.

Material Composition

Steel rebar and MBQ products are manufactured entirely from carbon steel. They do not contain any materials or substances for which there exists a route to exposure that leads to humans or flora/fauna in the environment being exposed to said materials or substances at levels exceeding safe health thresholds.

Manufacturing

The Nucor Seattle Mill is a steel mini-mill which uses electric arc furnace (EAF) technology to produce steel from recycled scrap metal. Scrap metal is received via rail and truck and is inspected and sorted into piles located within the on-site scrapyard using electro-magnetic cranes. Scrap is moved from the scrapyard in charge buckets mounted on flatbed cars to the melt shop. Scrap buckets are picked up using an overhead charging crane and dumped into the top of the EAF. Typically, the EAF contains a “hot heel,” which is a small amount of molten steel from the previous heat (batch of steel), to assist in the rapid melting of the new scrap charge. Once the EAF is charged with scrap, electric current is applied via three large electrodes made of graphite or other high carbon material to melt the scrap. The electrodes are consumed in the melting process. The Seattle Mill EAF is equipped with co-jet burners which introduce natural gas and oxygen for oxyfuel combustion. These burners even out energy imbalances, reduce furnace hot spots, and improve the overall energy efficiency of the process.

Additives are introduced during the melting process to maintain the optimal steel melting conditions and to achieve the desired steel grade. Lime is added as a fluxing agent to assist in the removal of unwanted constituents. Carbon can be added with the initial charge or injected with oxygen. Charge carbon carburizes the steel and provides additional energy to the melting process by the chemical oxidation of the carbon. Injection carbon and oxygen forms carbon monoxide bubbles which agitate and convert the slag to a frothy consistency. This practice enhances the removal of impurities in the steel and also provides faster heat times, thereby improving energy efficiency. Additional additives may include various metal alloys to achieve the desired composition of the final steel product.

Once the ideal melt conditions have been reached, a ladle is placed at the tapping side of the EAF, the furnace is de-energized, and the molten steel is poured into the ladle. The ladle transports the molten steel to a stir station which promotes a more homogeneous mixture. The molten steel then enters the tundish which is a funnel-like device which feeds molten steel to a continuous casting process using water-cooled copper molds. In the caster, the steel begins to cool and solidify into billets.

The EAF is equipped with a high temperature baghouse to control particulate matter emissions from the process. Any EAF emissions not captured by this baghouse enter the melt shop, where they are captured by the melt shop canopy hoods and directed to a low temperature baghouse. This low temperature baghouse also captures emissions from other processes in the melt shop such as natural gas combustion for preheating of the ladle, tundish, etc. and billet cutting torches.

The steel billets are further processed by first reheating them to around 2,000°F in a reheat furnace. The reheated billets then enter the rolling mill where they are rolled into final steel products. Steel products include concrete reinforcing bars or merchant bar products such as hot-rolled bars, rod, light shapes, structural angles, structural

channels and guardrails in carbon and alloy steel. The final steel products are packaged and transported off-site via rail or truck.

Steel products are transported via rail or truck from Nucor Seattle to downstream fabrication facilities. At these facilities, the steel is cut, rolled, or bent before being sold to consumers. Finished steel is also sold to distributers for consumer use.

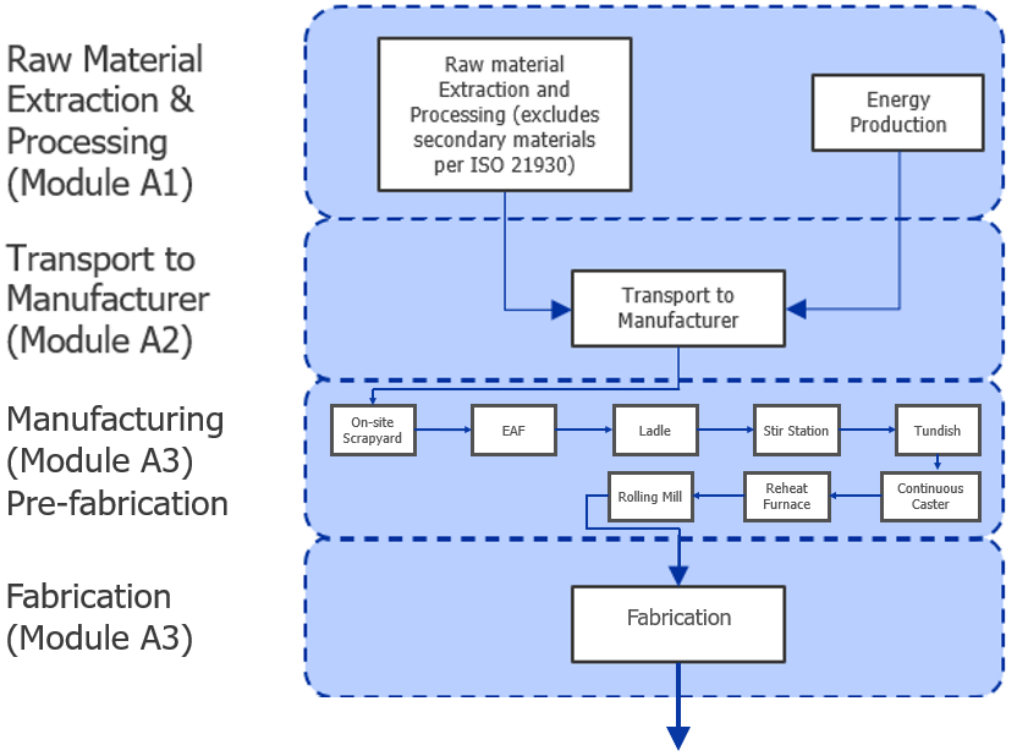

Figure 1: Flow chart for product system

Packaging

Packaging at the Nucor Seattle facility falls below the cut-off criteria and therefore it is not included in the LCA for this EPD. Packaging at the fabrication facility includes the use of bags, tags, dunnage, and pallets and is included.

2. Life Cycle Assessment Background Information

Declared Unit

The declared unit is one (1) metric ton of fabricated steel reinforcing bar and merchant bar product.

System Boundary

Per the PCR, this cradle-to-gate analysis provides information on the Product Stage of the steel product life cycle, including modules A1, A2, and A3. Product delivery, installation and use, and product disposal (modules A4 – A5, B1 – B7, C1 – C4, and D) have not been included.

PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Cut-off Rules

Per the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact are included in the inventory. In cases where no matching life cycle inventories were available to represent a flow, proxy data were applied based on conservative assumptions regarding environmental impacts. No other known flows are deliberately excluded from this EPD.

The packaging material inflow at Nucor Seattle is not included in the LCA. The packaging material represents less than 1% of the total inflow by mass and is therefore well below the limits given by the cut-off rules stated in the relevant PCR document for this EPD. Cumulatively, these exclusions may not exceed 5% of total impacts or total mass inflow. Packaging at the fabrication site is included.

The mass input of each of these omitted streams is less than 1% of the total mass input streams into the system and the cumulative mass input of all of the omitted streams is less than 5% of the total mass input streams. Therefore, no data gaps were allowed which were expected to significantly affect the outcome of the indicator results.

Data Sources

The LCA model was created using the GaBi Software system for life cycle engineering, version 10.5.1.124, developed by Sphera (Sphera, 2021). Background life cycle inventory data for raw materials and processes were obtained from the GaBi 2021.2 database. Primary manufacturing data and fabrication data were provided by Nucor.

Data Quality

A variety of tests and checks were performed by the LCA practitioner throughout the project to ensure high quality of the completed LCA. Checks included an extensive review of project-specific LCA models as well as the background data used.

Primary data represents production in the United States at the Nucor Steel Seattle facility. Fabrication data represents production in the United States at two downstream fabrication facilities. An electricity provider specific dataset, via Seattle City Light, was used to represent the Seattle facility's energy consumption. Proxy datasets were used as needed for raw material inputs to address lack of data for a specific material or for a specific geographical region. These proxy datasets were chosen for their technological representativeness of the actual materials.

Period under Review

Primary data collected represent production during the 2020 calendar year. This analysis is intended to represent production in 2020.

Allocation

Per ISO 21930 and the PCR, this LCA follows an attributional approach. As such, no allocation using system expansion was performed. Allocation of background data (energy and materials) taken from the GaBi 2021 databases is documented online at http://www.gabi-software.com/international/support/gabi/.

The Nucor Seattle Mill EAF produces steel billet and slag. All slag is sold as-is. Of the steel billet, 7.1% by mass is sold as-is, while the remaining 92.9% by mass continues onto the rolling mill to be rolled into steel reinforcing bar and merchant bar products. The slag and steel billet are considered co-products of the product system resulting from a joint co-production process. Therefore, this study allocated the environmental burden upstream of the rolling mill between the slag, steel billet, and steel reinforcing bar and merchant bar products.

Estimates and Assumptions

The underlying study was conducted in accordance with the PCR. While this EPD has been developed by industry experts to best represent the product system, real life environmental impacts of fabricated steel products may extend beyond those defined in this document.

All of the raw materials and energy inputs have been modeled using processes and flows that closely follow actual production data on raw materials and processes. All of the reported material and energy flows have been accounted for.

Raw Material procurement and upstream transport to Nucor's Seattle Mill is included for all raw materials above the cut-off thresholds. Distances by truck and rail were estimated using Google Earth, while sea travel distances were estimated using searoutes.com. In some cases, the Seattle Mill sources a single raw material from multiple distributors, in which case the transport to every distributor was modeled assuming an equal distribution. Only travel to the facility is accounted for (i.e., return truck and rail trips are considered out of scope).

Steel produced at Nucor Seattle is transported via rail or truck to multiple fabrication sites. Emissions from transport to the fabricator were included by calculating a weighted average distance for each mode of transport.

3. LCA Results

LCIA results are relative expressions and do not predict actual impacts, the exceeding of thresholds, safety margins or risks.

Buy Clean California Act (BCCA) Results

The Buy Clean California Act (BCCA) allows for the exclusion of emissions that occur during the fabrication stages in reporting total Global Warming Potential (GWP) results. Therefore, this LCA report provides separate, pre-fabrication GWP results for BCCA compliance.

Table 2. BCCA Results, per 1 metric ton (unfabricated)

Parameter	Unit	A1	A2	A3	Total
GWP 100 (excl. biogenic carbon)	kg CO_2 eq.	177	12	224	413
GWP 100 (incl. biogenic carbon)	kg CO_2 eq.	176	12	224	412

Fabricated Bar Results

Fabrication requires 1.08 metric tons of bar per 1 metric ton of fabricated product. Module A1 includes production of all 1.08 metric tons of bar.

Table 3. LCIA results, per 1 metric ton (fabricated)

Parameter	Unit	A1	A2	A3	Total
GWP 100 (excl. biogenic carbon)	kg CO_2 eq.	191	13	329	532
GWP 100 (incl. biogenic carbon)	kg CO_2 eq.	191	13	313	517
ODP	kg CFC 11 eq.	5.0E-13	6.7E-15	2.0E-05	2.0E-05
AP	kg SO_2 eq.	9.3E-01	5.2E-02	9.1E-01	1.9
EP	kg N eq.	2.3E-02	4.7E-03	6.9E-02	9.7E-02
SFP	kg O_3 eq.	10.6	1.4	22.8	34.8
ADP_{fossil}	MJ surplus	367	19	159	546

Table 4. Resource use results, per 1 metric ton (fabricated)

Parameter	Unit	A1	A2	A3	Total
RPR_E	MJ LHV	128	10	2517	2656
RPR_M	MJ LHV	0	0	0	0
$NRPR_E$	MJ LHV	3558	176	1635	5369
$NRPR_M$	MJ LHV	988	0	0	988
SM	kg	1014	0	0	1014
RSF	MJ LHV	0	0	0	0
NRSF	MJ LHV	0	0	0	0
RE	MJ LHV	0	0	0	0
FW	m^3	1.45	0.03	11.17	12.65

Table 5. Output flows and waste categories results, per 1 metric ton (fabricated)

Parameter	Unit	A1	A2	A3	Total
HWD	kg	5.1E-07	1.3E-08	2.8E-07	8.0E-07
NHWD	kg	4.7	2.5E-02	1.0	5.8
HLRW	kg	4.0E-05	3.6E-06	1.4E-04	1.9E-04
ILLRW	kg	3.2E-04	3.4E-05	1.3E-03	1.7E-03
CRU	kg	0	0	0	0
MR	kg	0	0	16.8	16.8
MER	kg	0	0	0	0
EE	MJ LHV	0	0	0	0

4. LCA Interpretation

The below figure presents the relative contribution of the A1, A2, and A3 modules (including fabrication) to the total.

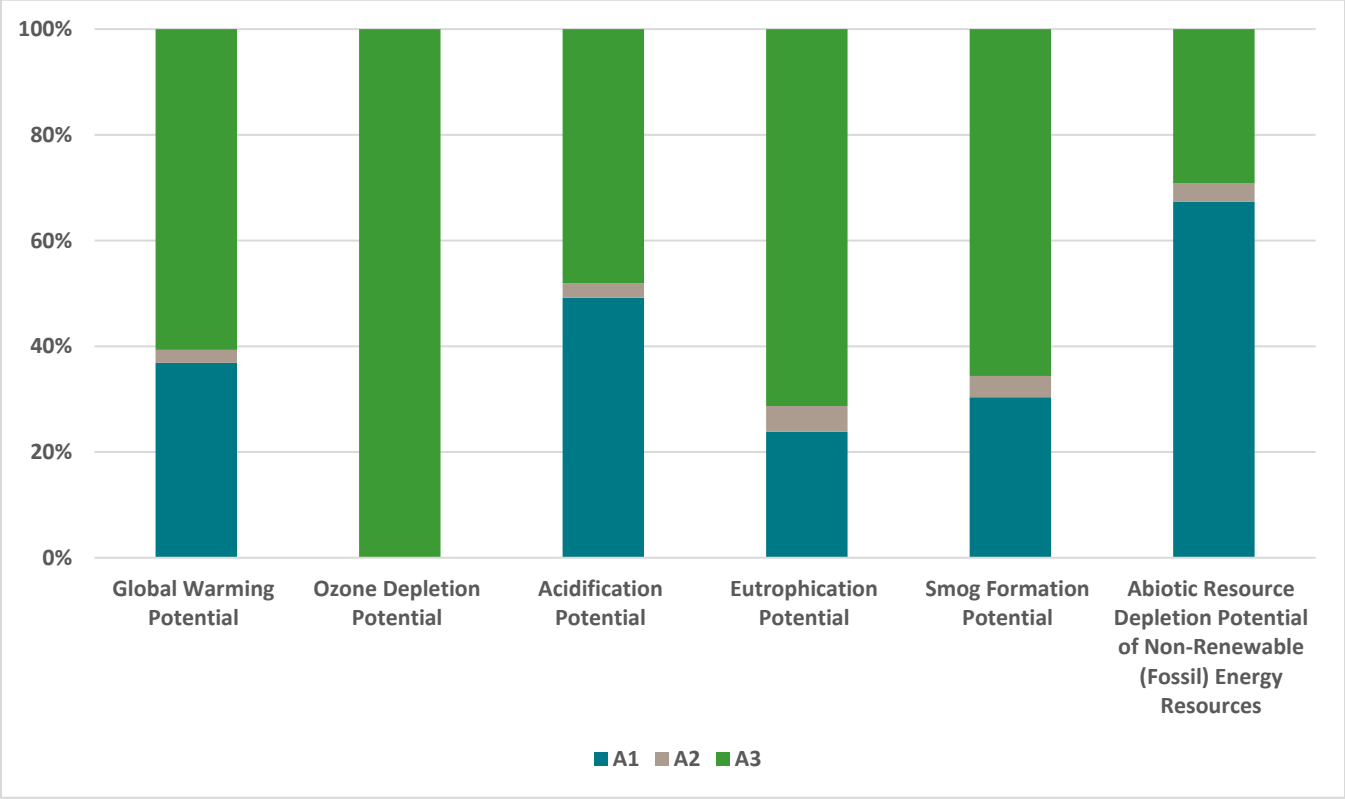

Figure 2: Relative contributions by module, IPCC AR5 + TRACI 2.1 impact categories

The impact assessment results indicate that Module A3, i.e. manufacturing, which includes purchased electricity generation, on-site natural gas and diesel combustion, and facility emissions is the key contributor to the potential environmental impact for global warming potential, ozone depletion potential, eutrophication, and smog formation. Module A1, i.e. raw material procurement, is a key contributor to acidification and abiotic resource depletion of fossil energy resources. Module A2, i.e. transport to manufacturer, is not the most significant contributor to any impact category.

5. Additional Environmental Information

Health and Safety

Refer to the Nucor Bar SDS[1] for additional environmental and health protection during the product manufacturing process. Be sure to follow all recommended handling and product manufacturing guidance.

Safety: Since 2005, Nucor has partnered with the Occupational Safety and Health Administration (OSHA) through its Voluntary Protection Program (VPP), which recognizes companies that voluntarily go the extra mile to meet rigorous safety standards. The Voluntary Protection Program (VPP) recognizes employers and workers in private industry and federal agencies who have implemented effective safety and health management systems and maintain injury and illness rates below national Bureau of Labor Statistics averages for their respective industries. An important aspect of VPP is the Special Government Employee (SGE) Program, which allows industry employees to work alongside OSHA and of which approximately 640 Nucor employees are active participants as of September 2018.

In terms of safety, 7 of Nucor's 12 rebar and merchant bar mills have attained their VPP certification from the federal OSHA, which is OSHA's highest level of recognition that few manufacturers achieve, and demonstrates our commitment to leading the industry by example. The seven steel recycling facilities in Nucor's Bar Mill Group that have VPP status are: Nucor Steel Auburn Inc. (NY), Nucor Steel Jackson, Inc. (MS), Nucor Steel Kankakee, Inc. (IL), Nucor Steel Kingman, LLC (AZ), Nucor Steel Marion, Inc. (OH), and Nucor Steel – Texas.

Four Nucor divisions employ the American National Standards Institute (ANSI) Z-10 Occupational Health and Safety Management System. And four others participate in the OSHA Series (OSHAS) 18001 Divisions. ANSI Z-10 is audited to best practices and in safety and health. OSHAS 18001 is an international safety and health system that provides a framework to promote better safety and health systems.

Environmental Activities and Certifications

Certain additional environmental activities and certifications are discussed in the following subsections. More information on Nucor's certifications and environmental initiatives can be found at www.nucor.com/.

ISO 14001:2015 Environmental Management System: The environmental performance of Nucor's bar steel mills focuses on continuous improvement through internal and external training, application of new technologies and how data and results are communicated. To provide a framework for Nucor teammates to follow, Nucor utilizes ISO 14001, which is the international standard that establishes specific requirements for an effective environmental management system (EMS). Like each of Nucor's bar steel facilities, Nucor Steel Seattle's environmental management system has been accredited to the ISO 14001 standard since 2009.

Sustainability: Through recycling, Nucor has made the United States the cleanest place in the world to make steel. We are producing the sustainable steel that will build our modern 21st century economy. For more than 50 years, Nucor has been making steel using an electric arc furnace (EAF) that melts recycled scrap and turns it into new steel. EAFs are far less energy intensive and more energy efficient than traditional blast furnace steel making. Electric arc furnaces allow Nucor to produce less emissions than competitors who often make steel by melting iron ore and coking coal.

By recycling scrap in EAFs, Nucor's energy intensity (average gigajoules per metric ton of steel produced) is 74% lower than the global average, and its greenhouse gas intensity (metric tons CO2 per ton of steel produced) is less than one-third the global average, and nearly one-fifth of the average integrated (BF/BOF) steel producer. Today,

[1] https://assets.ctfassets.net/aax1cfbwhqog/UcLHwfmcRVoyrpxb15vZl/c73a00f2a213af726e2ef74584c79517/SDS-Bar_Steel.pdf

Nucor's greenhouse gas emissions intensity is less than one-third of the Paris Climate Agreement's most aggressive 2030 target for the global steel sector, the below 2 degrees Celsius benchmark compared to pre-industrial levels.

Today, Nucor accounts for more than 25% of the United States' steel production, but only accounts for 8% of the domestic steel industry's greenhouse gas emissions. However, Nucor realizes that being one of America's cleanest and most efficient steelmakers is not enough. That is why Nucor is committing to a 35% combined reduction in its steel mill Scope 1 and Scope 2 greenhouse gas intensity by 2030, measured against a 2015 baseline. This goal will take Nucor's steel mill CO2 emissions down to 77% less than today's global steelmaking average, and 82% less than today's integrated steelmaking average. Beyond 2030, Nucor is committed to further reducing its greenhouse emissions to a goal of net zero emission steel at scale.

Nucor also recently launched its Econiq™ product line, which is the world's first net-zero steel available at scale. Econiq is not a single product; it is a net-zero certification, which can be applied to any product from Nucor's steel mills by balancing the CO2 produced by our activities by an equivalent amount being removed. We achieve net-zero on Econiq products by eliminating all remaining Scope 2 emissions (by using 100% renewable electricity certificates) and by offsetting all Scope 1 emissions (through the purchase of carbon offsets). Per the requirements of the Product Category Rule for Building-Related Products and Services in North America, Part A, Renewable Electricity Certificates are not included in this LCA. Nucor shipped its first Econiq steel to a commercial customer in January 2022.

Recycled Materials Content: Nucor proudly uses recycled scrap to make high-quality steel with low emissions, using one of the cleanest and most energy efficient steel-making processes available. Steel can be infinitely recycled and reused without any quality loss. Nationwide, Nucor steel products are made from an average of 71.4% recycled content, with some products containing as almost 100% recycled content. Nucor Steel Seattle, Inc. mill uses 97.4% recycled scrap to produce new bar steel products that are 100% recyclable at the end of its useful life.

Globally, only 26.3% of the more than 2 billion net tons of steel produced in 2020 was made by recycling scrap in EAFs – and EAFs only accounted 9.2% of the 1.17 billion net tons of steel made in China. Scrap inputs for the total crude steel production globally have remained at around 35% since 2013. To effectively address the goals set by the Paris Climate Agreement, the International Energy Agency recommends that the global market share needs to reach over 40% by 2030 – less than half the percentage that Nucor Steel Seattle uses in its day-to-day production today.

Waste and Water Recycling: Nucor's EAFs, including the ones at its bar steel mills, emit less than 1% of the particulate matter of a traditional steel blast furnace – and the company recycles 99 percent of the EAF dust it collects in its baghouses. Nucor also recognizes that water is a critical natural resource and is essential to our business and the communities in which it operates. Nucor has worked extensively to improve water use efficiency in its processes. One hundred percent of the process water from Nucor's steelmaking operations is recycled multiple times at its bar steel mills. Currently there are no Nucor steel mill division located in a High or Extremely High Water Stress Area.

Nucor also participates in the Network for Business Innovation and Sustainability (NBIS) By-Product Synergy Group. This NBIS group brings together environmental experts from a wide variety of industries to allow them to compare waste streams and find ways to divert materials from landfills.

Clean Energy: Nucor Steel Seattle, Inc. benefits from access to clean, low-carbon hydroelectric power produced by the city's utility, Seattle City Light. Nucor Steel Seattle is one of Seattle City Light's largest customers and is involved in the HPEM program which helps industries best mark practices and technology with the goal of identifying projects that could reduce electricity usage. Combined with its recycling capabilities, the Seattle bar mill's use of hydroelectric power to run our EAF gives Nucor Steel Seattle one of the smallest carbon footprints of any steel mill in the world.

As America's cleanest and most efficient steel company, Nucor is increasing its utilization of renewable energy and supporting the continued growth of clean power generation in the United States.

In November 2020 and March 2021, Nucor entered two Virtual Power Purchase Agreements (VPPAs) which support the development of more than 350 megawatts of new clean energy infrastructure, making Nucor the 7th largest

corporate buyer of renewable energy in America, and the largest of any steel producer.

The VPPAs enable the construction of 250MW of new solar energy and 100MW of new wind energy in Texas. Together, these two projects are equal to the electricity usage of nearly 70,000 Texas homes, and have the potential to supply renewable power to the regional electric grid 24-hours a day.

Environmental Training: In 2015, Nucor established Nucor Environmental University (NEU), an online training platform for Nucor teammates with environmental responsibilities and others looking to expand their involvement with the environmental team. From the beginning, Nucor designed this program to help teammates develop a thorough and meaningful understanding of environmental compliance. NEU has had over 1,000 active users since its inception and Nucor teammates have completed at least 10,000 environmental training courses, passed over 6,600 training exams, and helped develop dozens of courses. Because of NEU, Nucor's teammates are better prepared to meet the demands of environmental compliance and achieve Nucor's goal of being a sustainable organization.

Living Building Challenge: Nucor Seattle is compliant with the Living Building Challenge (LBC)'s I-13 Red List. LBC is a green building standard with a goal to create "Living Buildings" that incorporate sustainable design solutions that actually improve the local environment rather than focusing on environmental impact reduction. LBC's I-13 Red List represents the "worst in class" materials, chemicals, and elements known to pose serious risks to human health ecosystems that are common in the building products industry.[2] The International Living Future Institute (ILFI) believes that these materials should be phased out of production due to human and/or environmental health and toxicity concerns.[3] ILFI, based in Seattle and Portland, is an environmental NGO committed to catalyzing the transformation toward communities that are socially just, culturally rich and ecologically restorative.

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7. Contact Information

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