-

BACUTI Primer

UNDERSTANDING THE LOW EMISSION STEEL STANDARD

B A C U T I

Solutions for a Cleaner Planet

CONTACT
WEBSITE: www.bacuti.com
EMAIL: hello@bacuti.com

Aug 2024

Table of Contents

Introduction

LESS stands for Low Emission Steel Standard. It's a voluntary labelling program that classifies steel based on the carbon di oxide emissions released during pre-production and production of steel.

The **Low Emission Steel Standard (LESS)** is a new German certification standard that will provide a method for steel companies to disclose the sustainability status of their steel production. Certification will begin for companies in Q3 of 2024 and will require in-depth evaluation and reporting of product-level (scope 3) greenhouse gas emissions.

Key Take-aways

- Low Emission Steel Standard (LESS) is a new German certification standard
- Provides a universal, standardized avenue for steel companies to assess, report on, and disclose GHG emissions
- Optional but Highly Beneficial Sustainability Certification for Steel Companies
- Implemented and Available in Q3 2024
- Requires Complex Scope 3 Greenhouse Gas Emissions Reporting

LESS certification is optional for companies, but highly recommended as it provides a universal, standardized avenue for steel companies to assess, report on, and disclose their GHG emissions. LESS will apply to each of the two major methods of steel production: blast furnace production, and electric production. This will provide for simplified comparability of the two methods.

LESS is designed to be used internationally, especially within the European Union, further building on the standardization of its certification.

Background and Timeline

LESS is a product of several interconnected factors. The first is Germany's stated goal of achieving a fully climate-neutral economy by 2045. This poses a major challenge for the country, as it is home to one of the world's largest industrial economies and is currently responsible for a significant amount of greenhouse gas emissions.

Steel production is a massive industry which contributes heavily to the emission of greenhouse gases. Germany's steel industry is one of the biggest in the world, and it makes up 30% of Germany's total emissions associated with industrial processes. Germany produces 36% of all the steel produced by European Union member nations. As such, the steel industry was the clear initial target for initiatives to

further the country's carbon-neutrality goal. The rapid implementation of LESS standards and certification can be attributed to this priority.

LESS was formed jointly by the German Federal Ministry for Economic Affairs and Climate Action (BWMK), including stakeholder representatives of political institutions, manufacturers, customers, and more, and the German Steel Association, which represents a large share of Germany's most prolific steel production companies.

The LESS certification system will be completed in Q3 2024, and companies are expected to begin the LESS certification process by the end of Q3 2024.

Reporting Requirements

LESS certification requires detailed reporting on each of the three main "scopes" of emissions.

"Scope 1 emissions" refers to direct greenhouse gas emissions generated from sources owned by a company, such as energy production, heating, and cooling.

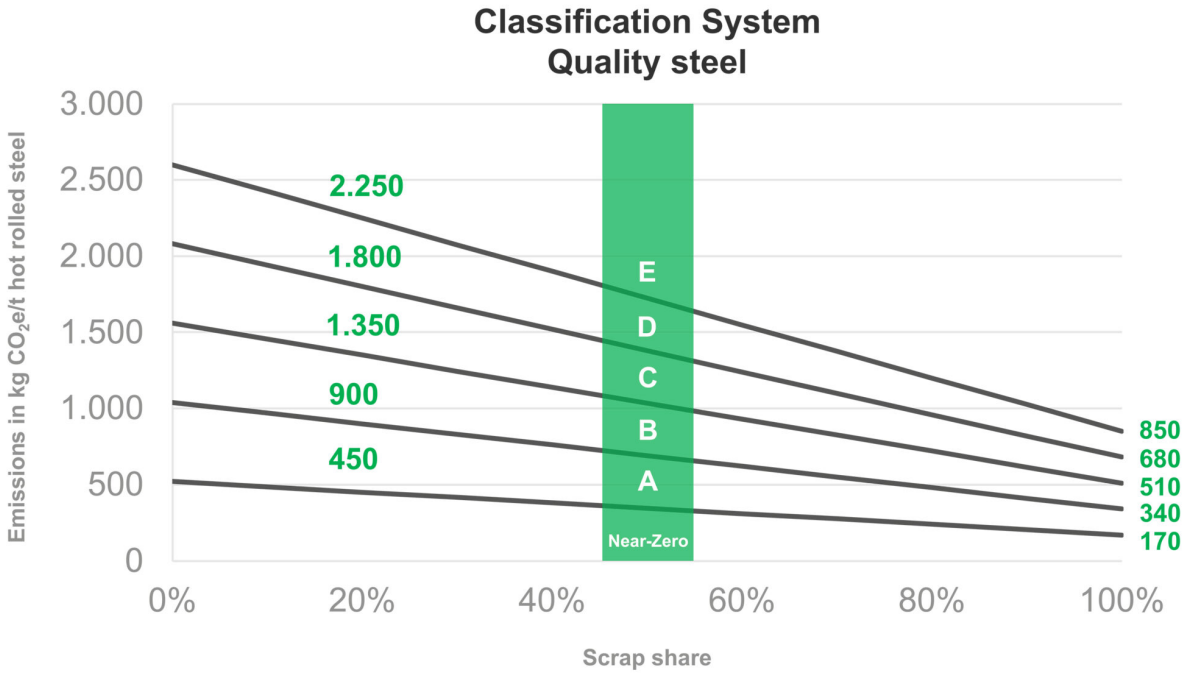
"Scope 2 emissions" refers to indirect greenhouse gas emissions from electricity, energy, and heating that are produced off-site and purchased by a company.

"Scope 3 emissions" typically covers all other indirect upstream and downstream emissions. These are associated with a company across the supply chain, such as the production of raw materials used in manufacturing and the transportation of produced goods. **LESS only requires the reporting of scope 3 upstream (3U) emissions**; those associated with any preliminary products.

Classification System

LESS utilizes a **six-stage classification system** which designates individual products a label of "near-zero" or a letter grade, A to E. Near-zero and lower letters indicate better emission efficiency to produce a given product. The primary determinant for classification is kilograms of emitted carbon dioxide equivalent (kg CO_2e) per tonne of steel, however classification is assigned based on a "sliding scale" system, in which the threshold for achieving a better class is lowered (i.e., more demanding) progressively depending on the proportion of scrap iron used in production.

The classification system is solely based on these two factors: CO_2e and scrap share. Thus, it remains applicable to a wide range of steel production methods, providing for direct comparability between low- and high-emission manufacturing.



Emissions Calculation Methodology

The determination of emissions for inclusion in LESS classification involves a comprehensive approach to account for scope 1, scope 2, and certain scope 3 emissions from steel production. The process starts with a company creating an internal determination model. **This model must be validated by an approved certification body to ensure compliance**. The model should describe methods for calculating emissions and classification, ensuring accuracy and transparency in emissions reporting. Regular reviews and potential amendments to the determination model are necessary to accommodate technological changes or other significant modifications.

One of the most important principles is to define the emission sources that must be taken into account within the classification system. Scope 1 and Scope 2 emissions from the process steps considered must be accounted for in all cases. LESS emissions calculation fully incorporates all scope 1 and 2 greenhouse gas emissions. **Scope 1 emissions should be calculated using data from the EU Emissions Trading System (ETS)**. Scope 2 is determined by the processes of the plant(s) from which purchased energy is obtained.

The classification system pursues a cradle-to-gate approach with regard to the Scope 3 emissions. This means that none of the downstream emissions are considered. LESS calculation partially covers embedded emissions from the materials procurement phase and the steel production phase; post-production (downstream) emissions are not considered. The materials procurement phase consists of obtaining materials, upstream energy costs, and upstream transportation. During production, any emissions derived from energy produced on-site, as well as transportation, are covered as well.

Components of scope 3 such as disposal of waste generated during production and manufacturing-unrelated transportation (commuting) are not included in LESS.

Due to differences in the steel-production process given certain factors, adjustments to LESS' methodology are provided. Included in the list of adjustable factors are the use of alloying agents, carburizing agents, and excess rolling mill input.

Accounting for the defined accounting range is always to be performed at the level of a single asset, or of a location for several assets. Subcontracted activities are treated separately. Enabling account to be taken of the opportunities for reducing emissions in both production routes means that the classification system does not relate to crude steel, but to a hot-rolled product (single heating) without any further treatment, such as further heat treatment.

The plant operator must decide whether and how its products is segmented for classification within a classification system for each site. A uniform procedure is always required within a classification group. The products or product groups within the classification group must be uniformly defined and emissions must also be uniformly allocated. A produced product quantity may only be assigned to one classification group at a time.

The full LESS rulebook, including specific parameters, quantities, and adjustments can be found here (English) and here (German).

WHY USE LESS?

Adopting sustainable practices and reducing greenhouse gas emissions associated with steel production is beneficial from a business perspective: lower emissions result from a more efficient manufacturing process, reducing losses and expenses.

The critical factor that elevates LESS to a high level of importance **is the comparability it facilitates between different steel production routes**: blast furnace, electric arc furnace, hydrogen, and more. According to the German Steel Association, members of the processing and customer sector were among the representatives who created and introduced LESS because a universal, normalized steel standard among production methods is a **highly desirable characteristic for customers**.

As time progresses, ESG reporting is becoming substantially more important, and the fastest-growing component is environmental responsibility. Climate change is at the forefront of public consciousness and companies are increasingly expected to be leading the charge towards creating a greener future, especially in large and heavily emitting industries like steel.

Worldwide, but particularly in jurisdictions where environmental consciousness is highly valued such as Europe, companies will be expected to provide climate data as a part of their typical financial and corporate responsibility disclosures. Disclosing emissions data in a manner which is standardized across the industry internationally will prove useful to companies, greatly increasing accessibility to consumers and investors,

LESS standardization will allow companies to clearly display their commitment and strategies towards reducing environmental impact via the manufacturing process. Improved climate reporting with near-universal comparability between products, companies, and processes will facilitate higher competitiveness in an increasingly climate-focused market. This will result in companies that commit to carbon neutrality and LESS certification to present themselves as premium producers and gain an advantage within the industry.

Summary and Implications

LESS will substantially expand accessibility of sustainability data to an ever-growing environmentally conscious base of investors and customers, thus introducing a major incentive for steel companies in Germany and elsewhere to diligently report on their greenhouse gas emissions. Steel companies are recommended to be adequately prepared to disclose their climate data and product-level emissions, however the calculation and reporting of product-level, scope 3 emissions pose a significant challenge that should be addressed.

Many companies eligible for LESS certification manufacture an extensive number of products to evaluate, and the specificity of scope 3 emissions requires a highly complex assessment of associated emissions of each individual product. This complexity means that manual sustainability consulting is likely not sufficient moving forward. With the availability of LESS certification on the horizon, companies may not be prepared to accurately evaluate and report on their scope 3 emissions. **The most viable solution for this problem in the future will be utilizing software to conduct a product-level analysis and calculation of greenhouse gas emissions**, thereby enabling efficient sharing of data, and complying with scope 3 reporting regulations. Software which can automate the processes of calculating emissions and reporting will be critical moving forward, especially as standards LESS come into force and sustainability reporting becomes a mandatory endeavor worldwide.

APPENDIX

About BACUTI

BACUTI offers a SaaS platform to calculate and report Product Emissions Footprint (PEF) including Scope 1, 2 and 3 accurately and cost effectively, share data securely across the entire supply chain and build realistic plans and forecasts. Certification workflow is integrated in the platform.

With BACUTI, customers get accurate emissions (Scope 1, 2 & 3) to meet their regulatory requirements (e.g., CBAM). Early adopters of CBAM compliance will have a competitive advantage serving EU customers. PEF estimation processes become cheaper & collaboration with customers improves. Furthermore, customers can grow revenue through value added services around sustainability. Overall, customers should see enhanced brand value due to better sustainability posture.

BACUTI offers a ML-based estimation tool to calculate product level emissions cost effectively and at scale, a secure enterprise platform to share fine-grained emissions data with selected partners without exposing IP, and a SaaS platform that automates reporting, certification, planning and forecasting makes BACUTI unique.

About the Author(s)

Nikhil Shah is a third-year environmental analysis student at Pitzer College interning as a policy researcher and content writer for BACUTI.

Rajesh Srinivasaraghavan is the co-founder of BACUTI. He has almost 30 years of experience in enterprise software, technology, consulting and business transformation.