

Life Cycle Services
Qualifications Profile for the Steel Industry

SCS



SCS Global Services Lifecycle Services Summary

SCS Global Services (SCS), is an international leader in third-party certification and standards development in the fields of environmental, sustainability, food safety and quality performance claims. Founded in 1984, our services include auditing, testing, certification, verification, life cycle assessment, training, standards development, and strategic consulting. We are a chartered Benefit corporation based in Emeryville, California, operating on six continents with a network of subsidiaries, regional representatives, sales offices, auditors, and testing labs. Our work reaches a broad cross section of the economy including resource extraction, energy, manufacturing, retailing, consumer products, home improvement, construction and agriculture production.

SCS stands for Scientific Certification Systems, the name under which we are incorporated, reflecting our commitment to three core principles: the importance of basing decisions on sound science, assuring the veracity of claims, and maintaining a holistic, systems-oriented perspective. SCS Life Cycle Services has been completing LCAs for over 30 years for many major industries, NGOs and governments using a variety of recognized methodologies. We are recognized internationally for our work with global entities and have spoken extensively on the topic at many national and international forums, including: The American Center for Lifecycle Assessment (ACLCA), the UN Conference on Greenhouse Gases, and the United States Environmental Protection Agency (EPA).

Our experienced team has a diverse technical background that utilizes the latest software and databases in our work to ensure that the LCAs are complete, accurate, and cost-effective. Our expertise also includes standards development and participating in the development of ISO LCA standards, as well as having chaired and participated in multiple Product Category Rule development committees. The SCS Life Cycles Services team is also active in LCA related standards development, including the development of the ACLCA Open Standard, and PCRs under SmartEPD, NSF and others.

SCS is an internationally recognized EPD program operator, with mutual recognition with the International EPD system. We are experienced in providing LCA/EPD services with steel manufacturers within North America and globally.

SCS and Steel

The SCS Life Cycles Services team has a long history of working closely with the Steel industry, including the development of the first North American Product Category Rule for Designated Steel Construction Products. Since then SCS has performed numerous LCAs and external LCA reviews/EPD verifications for steelmakers, steel product manufacturers, and steel fabricators, produced and/or verified several industry-wide EPDs, and performed comparative LCAs for industry organizations such as AISI. Our clients return to work with us for our expertise reliability and excellent customer service. Our team of in-house experts are available to provide guidance and clarity at any point during the process.. We have presented our expertise on steel industry, provided insight into sustainability developments in the industry, and performed a variety of consulting tasks drawing from our steel expertise to meet our client's needs.

Recently, we were named one of the first approved verifiers under the Global Steel Climate Council's Steel Climate Standard, a low-emission steel standard for all steel producers. This standard aligns with a science-based approach to achieve the Paris Climate Agreement 2050 goals, irrespective of the production process used to make steel. Verification services as provided by SCS are a key pillar of the Standard.

Outside of the Lifecycle Services team, SCS provides a range of services to the steel industry including CBAM related needs, carbon footprint calculations and verification, recycled content declarations, health product declarations and many more.

- Industry-wide LCA and EPD of cold formed steel studs and track manufactured in the US and Canada.
Client: Steel Framing Industry Association
- Industry-wide LCA and EPD of steel doors and frames manufactured in the US. Client: Steel Door Institute
- Comparative environmental LCA of southern yellow pine wood and North American galvanized steel utility distribution poles.
Client: American Iron and Steel Institute
- Life Cycle Assessment of fabricated structural steel manufactured in U.S. and Canada. Client: Steel Market Development Institute, a business unit of the American Iron and Steel Institute, and the American Institute of Steel Construction
- Life Cycle Assessment and EPDs of steel coil and plate, from iron ore mining through BOF steelmaking.
Client: Cleveland-Cliffs, Inc.
- Life Cycle Assessment and EPDs of steel products (coil, plate, line pipe, seamless pipe, large diameter pipe, rail, welded casing and tubing) in two EAF mills and several product mills. Client: EVRAZ NA
- Life Cycle Assessment and EPD of Low Embodied Carbon steel tube. Client: Bull-Moose Tube
- Cradle-to-grave LCAs of steel products (rebar, merchant and structural, and automotive steels) for B-corp submission.
Client: Gerdau Long Steel; Gerdau Special Steel
- LCI plus partial LCIA of galvanized, aluminized, and galvanized steel components used in computer units.
Client: International Business Machines Corp. (IBM), U.S.

Demonstrated Steel Expertise

Verifier Under Global Steel Climate Council's (GSCC®) Steel Climate Standard

SCS provides third-party verification and validation services under the Global Steel Climate Council's (GSCC®) Steel Climate Standard offering the following verifications:

- Company Average Steel Emissions Intensity (CASEI)
- Science-based Emissions Targets (SBETs)
- Product Carbon Footprint(s)

Carbon Border Adjustment Mechanism (CBAM) Solutions for Iron & Steel Imports

SCS helps organizations meet CBAM requirements and compliance, including reporting, data verification and report assurance for their iron and steel products. CBAM solutions include the following:

- CBAM Advisory & Training
- Product Carbon Footprint
- CBAM Reporting & Verification
- Sustainable Supply Chain

Work with Industry Entities

SCS has conducted the life cycle assessment (LCA) or verified the Industry Wide Environmental Product Declarations (EPDs) for various steel product trade associations, including:

- Steel Recycling Institute
- Steel Framing Industry Alliance
- Steel Door Institute
- Corrugated Steel Pipe Institute

Dozens of LCA/EPD Studies

Completion of LCA studies and EPD verification for a wide array of unfabricated and fabricated steel products, including:

- Steel rebar
- merchant bar
- structural steel
- tubular products
- cold formed steel framing
- steel plate
- steel deck
- steel doors and frames
- metal buildings
- panels and coated products

Notable Steel Clients

- Gerdau Steel
- Nucor
- EVRAZ North America
- Cleveland-Cliffs
- Bluescope Buildings
- Salit Steel
- California Steel Industries
- ASC Profiles
- Bull Moose Tube Industries
- Bull Moose Tube Industries
- Arcelormittal
- North Star Blue Scope
- CEMCO
- Pacific Steel Group
- Vinton Steel

PCR Development

Development of the North American Product Category Rule (PCR) for Designated Steel Construction Products v1, working with trade associations including:

- AISI
- AISC
- MBMA
- CRSI
- Steel Framing Alliance (SFIA)



Team Member Bios

Tess Garvey, PhD., LCA Practitioner II

LCA Practitioner II

Dr. Garvey has been a Life Cycle Practitioner with SCS since 2019, where she conducts LCAs for a wide range of clients as part of their EPD and carbon footprinting certifications, with particular expertise with steelmaking and steel products. She has completed two industry-wide EPDs for steel products, and has worked with clients throughout the steel supply chain from virgin iron mining, direct reduced iron (DRI) production, EAF and BOF steelmaking, and finally various steel product manufacturing and fabrication. She has a breadth of experience with different available standards, including PCRs based on both ISO 21930:2017 and EN

15804:A2. Additionally, she has performed LCA reviews, EPD verification, and both ISO 14067 CF analysis and verification for her clients.

Prior to working at SCS Dr. Garvey held a post-doctoral fellowship with the US EPA's Life Cycle Center of Excellence, where she worked on integrating LCA information into decision-making processes within standards development. Dr. Garvey received her PhD in Sustainability from Rochester Institute of Technology (RIT) in 2016 where she conducted research on the use of life-cycle impacts nanomaterials in batteries for electronics and renewable energy applications.

Beth Cassese, LCACP, LEED Green Associate

EPD Program Manager

Ms. Cassese joined SCS as a Life Cycle Practitioner in October 2021 and has been the SCS EPD Program Manager since March 2023, focusing on program development, client interactions, and high quality team deliverables. She has over 14 years of experience managing and conducting LCA/EPD projects for a wide range of clients, specializing in LCA and EPD for construction products. Ms. Cassese is also experienced in LCA critical review, EPD verification, and has participated in a number of industry working groups for

PCR development. She is an active member of the American Center for Life Cycle Assessment (ACLCA) PCR and Policy committees. She is also a Life Cycle Assessment Certified Professional (LCACP) and a LEED Green Associate. Ms. Cassese has a Master's degree in Renewable Energy and Sustainability Systems from Penn State University and a B.S. in Social Psychology, with a concentration in Industrial and Organizational Psychology, from Park University.



Keith Killpack, M.S.

Technical Director

Keith Killpack is the manager of the Life Cycle Services program at SCS Global Services, and oversees the operation of the SCS EPD Program. Under his supervision, the department conducts life cycle assessment (LCA) for a wide range of industries and clients, using advanced methods now being standardized under the American National Standards Institute (ANSI) process (LEO-SCS-002), as well as popular commercial models such as SimaPro, GaBi and others. He has also helped with the development of Product Category Rules for conducting life cycle assessments of steel construction products, office seating, and office storage.

Mr. Killpack has helped develop methods using LCA to analyze whole buildings, including site selection and preparation, design and construction, building occupancy, maintenance and operations, upgrades, and decommissioning. Specializing in biofuels and bioenergy assessments, he has completed dozens of assessments for the US Department of Energy. He draws from prior experiences in environmental chemistry and applied biology, validation of environmental analytical data, environmental remediation projects, and sustainability. He holds a Master's degree in Environmental Science and Management and a B.S. in Biochemistry and Molecular Biology from UC Santa Barbara.

