



Part B: Product group definition | Utility poles | Part B #23-007

This Part B conforms to the ACLCA PCR Open Standard version 1.0 (May 2022) at the following level:

1 – Transparency 2 – Procurement 3 – Data source

Initiated by	American Composites Manufacturers Association (ACMA) - https://acmanet.org/		
Working group members	<p>Jim Mellentine, Thrive ESG (PCR committee chair) John Schweitzer, American Composites Manufacturers Association (ACMA) John Busel, American Composites Manufacturers Association (ACMA) La'Kia Phillips, American Composites Manufacturers Association (ACMA) Chris Bolin, AquAeTer, Inc. Natalie Tarini, Wood Preservation Canada Jeff Miller, Treated Wood Council Kevin Ragon, Southern Pressure Treaters' Association (SPTA) Cheryl Smith, Owens Corning Mike Schoenoff, Geotek Dan Mastrocola, Hydro Quebec Jonathan Jordan, EDM International, Inc. Kelsy Valko, Creative Composites Kevin Schmit, Enduro Composites Galen Fecht, RS Poles Scott Holmes, RS Poles Danny Lonergan, Valmont Eric Haddad, Valmont Natasha Jeremic, Canadian Wood Council Rodney McPhee, Canadian Wood Council Kerry Sutton, Slag Cement Association Tiffany Reed-Villarreal, National Ready Mixed Concrete Association (NRMCA) Kyle Cassidy, Stella-Jones Corporation Heath Huschak, Koppers Inc.</p>		
Public notices of development/outreach	<ul style="list-style-type: none"> • Public notice on the Sustainable Minds website announcing the development of new Part B on June 1, 2023: http://www.sustainableminds.com/transparency-report-program/part-b • Email blast on May 12, 2023 to mailing lists of LCA professionals, building and construction industry and trade associations, concrete manufacturers, and others identified by ACMA as having a potential interest in participating, requesting participation on the PCR committee. • Email blast on November 2, 2023 to the same mailing lists requesting public comment. 		
Non-participating parties	All interested parties who requested participation were invited to join the working group.		
New Part B?	Yes	Part B version number	1.0
Publication date	February 7, 2024		
Validity period	02/07/2024 – 02/06/2029		
Expected renewal schedule	Sustainable Minds intends to notify the working group and post update/renewal information on its website approximately four months prior to expiration to determine update, extension, or expiration options for this Part B.		

Product group

Name	Utility poles	CSI MasterFormat® #	33 71 16 Electrical Utility Poles 33 81 19 Communication Utility Poles
Description	Poles used to support overhead electric utilities and related equipment for transmission, distribution, and telecommunications applications. Finishes such as paints and coatings shall be included. Standard hardware accessories such as top caps, base plates, fasteners, and ID tags shall be included if relevant. If the product design requires specific materials to be used for installation, those materials shall be included in the installation stage.		
Exclusions	No exclusions identified		
Geographic representativeness	North America		

Program operator responsibilities

Existing PCRs, EPDs, TRs, or LCAs	<ul style="list-style-type: none"> • This Part B shall be used in conjunction with Sustainable Minds Part A: LCA calculation rules and report requirements, version 2023. • Relevant existing PCRs to use for reference while adhering to the requirements of this Part B: <ul style="list-style-type: none"> - NSF PCR for Concrete https://d2evkimvhatqav.cloudfront.net/documents/PCR-Concrete-2022-deviation.pdf?v=1674581547 - ASTM/NSF PCR for Precast Concrete https://d2evkimvhatqav.cloudfront.net/documents/astm_precast_concrete_v3.0.pdf?v=1631303354 - UL PCR for Designated Steel Construction Products https://www.shopulstandards.com/ProductDetail.aspx?productId=ULE10010-34_2_S_20200826 - ICC-ES/ASTM/NSF PCR for North American Pressure-treated Wood Products https://d2evkimvhatqav.cloudfront.net/documents/PCR-NA-Pressure-Treated-Wood-Products-2023-Feb-ext.pdf - UL PCR for Structural and Architectural Wood Products https://www.shopulstandards.com/ProductDetail.aspx?UniqueKey=36412 • Underlying LCA: Bolin, CA; Smith, ST. Life cycle assessment of pentachlorophenol-treated wooden utility poles with comparisons to steel and concrete utility poles. Renewable and Sustainable Energy Reviews Volume 15, Issue 5, June 2011, Pages 2475-2486. https://www.coxwood.osmosewood.com/pdf/Life_Cycle_Pentachlorophenol.pdf • Existing EPD used to inform some aspects of this Part B: Cradle-to-gate EPD for 1 metric ton of TU450 – vinyl ester 12" x ½" (305 mm x 12.7 mm) diameter round fiberglass reinforced polymer (FRP) pultruded utility pole. https://www.greenbooklive.com/filelibrary/EN_15804/EPD/BREGENEPD000479.pdf
Justification for new Part B if relevant non-expired PCR exists	<p>At the time of creation, an existing PCR for utility poles was not found. The PCR for pressure-treated wood products does not define a functional unit inclusive of utility pole function. Other PCRs (as listed above) cover the cradle-to-gate scope for materials out of which some types of utility poles can be manufactured. However, a PCR that covers the function of utility poles regardless of material does not yet exist.</p>
Harmonization activities pursued	<p>Sustainable Minds announced the creation of this product group definition to other program operators, LCA analysts, and manufacturers via email, and posted an update on its website. The existence of related PCRs was noted by NSF, including a PCR for pressure-treated wood products in the process of being updated. Sustainable Minds received from NSF a draft of the PCR for pressure-treated wood products and after review conferred with NSF on how to harmonize the PCRs. The outcome is that Sustainable Minds will refer to the NSF PCR for cradle-to-gate requirements for treated wood utility poles; NSF will publish their PCR with the utility poles as-is since it has already undergone review and will initiate an update to their PCR with the intent to exclude utility poles once the Sustainable Minds PCR is published. The result will be no overlapping scopes to the PCRs. No other harmonization activities were identified or conducted.</p>

Functional performance

Standard/certification (most recent edition, conformance not required for PCR conformance)	URL
2023 National Electrical Safety Code® (NESC®)	https://www.techstreet.com/ieee/standards/ieee-c2-2023?utm_source=ieeesa&utm_medium=web&utm_term=NESC&utm_content=std&utm_campaign=NESC_Landing&gateway_code=ieee&product_id=2254672
ANSI O5.1 - Wood Poles, Specifications and Dimensions	https://blog.ansi.org/ansi-o5-1-2022-wood-poles-specifications-dimensions/#gref
ANSI/ACMA/UCSC UP01-18-2019 - Standard Specification for FRP Composite Utility Poles	https://webstore.ansi.org/standards/ansi/ansiacmaucscup01182019
ASCE/SEI 48-11 - Design of Steel Transmission Pole Structures	https://sp360.asce.org/PersonifyEbusiness/Merchandise/Product-Details/productId/232616645
CSA A14:07 (R2022) - Concrete poles	https://www.csagroup.org/store/product/2701124/
ASTM C1089-19 - Standard Specification for Spun Cast Prestressed Concrete Poles	https://www.astm.org/c1089-19.html

System boundary

System boundary	<p>The type of EPD shall be specified as cradle to grave. The modules considered in the LCA shall be described in brief as per “System boundaries” outlined in ISO 21930:2017 section 5.2. Module D may be optionally declared. It should be apparent as to what processes are considered in each module per the module descriptions in ISO 21930:2017 section 7.1.7.</p> <p>While it is unclear whether capital goods and infrastructure are significant to the overall impacts of the products, it is known that different databases inconsistently account for these items in secondary data sets. To reduce possible artificial variation in EPD results across the product group, capital goods and system infrastructure flows shall be excluded from the system boundary by default, with justification required for alternative assumptions.</p> <p>When reporting Global Warming Potential (GWP 100 years) per ISO 21930:2017, biogenic CO₂ and biogenic CH₄ shall be included in the main GWP results; biomass carbon uptake and re-release of carbon in the form of CO₂ and CH₄ shall also be reported separately based on the biogenic carbon content of the product to be declared (see ISO 21930 Section 7.2.7).</p>
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Functional unit

Unit	One utility pole installed in North America over 40 years and 80 years.
Rationale	<p>The PCR committee discussed, at length, the estimated service life (ESL) of a utility pole. There are several reasons why a utility pole might be removed prior to reaching the end of its intended service life (e.g., road widening, service load changes, etc.). Utility pole customers, therefore, may value environmental information with a shorter and longer ESL depending on their specific needs. The committee surveyed utility pole customers to narrow the specified ESLs in this PCR and decided to require reporting for two ESLs: 40 years and 80 years.</p>

Additional rules for comparability

1. Additional rules to Part A	<ul style="list-style-type: none"> • EPDs shall disclose the LCA software and version used for modeling, and the database name(s) and version(s) used. • EPDs that use secondary data for any unit process that contributes 20% or more to any disclosed environmental impact category shall disclose the data source (database name and version, dataset name, dataset geography, and dataset allocation method). Materials considered confidential may be reported as “proprietary ingredient” along with the database name and version. • EPDs shall disclose the following information for each covered product: <ul style="list-style-type: none"> - Classification (per ANSI O5.1) - Length – m (ft) - Weight – kg (lb) - Material type (list per ANSI O5.1)
2. Default life cycle stage scenario(s)	<p><u>Note for treated wood utility poles</u></p> <p>Per the harmonization activities mentioned above, EPDs for treated wood utility poles shall also meet requirements from the cradle-to-gate, data criteria, and data quality portions of the most recent version of the NSF treated wood PCR (sections ‘A1 to A3, Production Stage’, ‘Criteria for the Inclusion and Exclusion of Inputs and Outputs’, and ‘Selection of Data and Data Quality Requirements’) such that treated wood utility poles results reflect consistent environmental accounting as other treated wood products.</p> <p>The rules in the following paragraphs also apply and are not intended to conflict with the NSF PCR.</p> <p><u>Extraction and upstream production (A1)</u></p> <p>When materials used in the product are represented by secondary data, the electricity grid profile of the data set should be adapted to the source country or region, if known and possible with the selected data set. Average data sets with Global or Rest of World average electricity profiles may only be used if the material source location is unknown or adapting the electricity grid is not possible.</p> <p>In cases when the EPD owner purchases manufactured components, the manufacturing process activity at the upstream supplier shall be counted in the extraction and upstream production stage, separate and in addition to the upstream raw material extraction. For example, if a</p>

manufacturer purchases a top cap or base plate that fastens to a pole, the cap or plate cannot simply be represented by steel material alone. Additional manufacturing must be added to represent the manufacturing of raw steel into the part. The upstream supplier location and potential scrap rate during the manufacturing process activity should be considered.

Transport to factory (A2)

In cases when the EPD owner maintains multiple suppliers for the same material or part, the life cycle inventory and impact assessment results shall reflect a weighted average transportation distance from the multiple suppliers for each mode of transport used. To simplify the calculation for those with many suppliers for the same material or part, suppliers which provide less than 5%, by mass or by volume, of a particular material or part may be excluded from the calculation of weighted average transport distance, subject to existing cut-off requirements in SM Part A. The method used for this calculation must be disclosed within the EPD.

Manufacturing (A3)

The electricity data set(s) used for manufacturing shall be disclosed in the EPD.

Transport to site (A4)

Transport from the utility pole manufacturing site to the customer shall be included. In addition, transport from the customer to the final installation site shall be included. In the absence of primary data, the distance from the utility pole manufacturing site to the customer is assumed to be 800 miles (1,290 km), and the distance from the customer to the final installation site is assumed to be 50 miles (80 km), assuming transportation by truck with an empty return trip of the same distance.

Land transport assumptions in addition to scenarios defined in Part A

For destinations requiring transportation by sea, if primary data are unavailable for land transport after the port of arrival, assume the land transport distance is 497 miles (800 km) by truck with an empty return trip of the same distance.

Warehouse/distribution center

Utility poles may be distributed through distribution yards en route to the final customer. However, the energy use at these facilities is considered insignificant and can be assumed to be zero.

Installation (A5)

The installation stage shall include, as applicable, any ancillary materials, energy and/or water consumption, and disposal of waste materials.

Manufacturers shall assume the installation is by direct burial using a digger derrick. Unless otherwise justified, manufacturers shall assume 33.5 liters (8.85 gallons) of diesel fuel is consumed when installing one pole. This default assumption is based on an approximate fuel consumption rate of 40.2 liters per hour for a typical digger derrick¹ and approximately 50 minutes of equipment run time per installed pole².

Estimated service life and product reference service life

This Part B requires reporting for two separate estimated service lives (ESLs) of 40 years and 80 years. This requires reporting two separate sets of results. Results for other ESLs may be additionally reported separately from the main results in a section for additional environmental information. All use stage activity and impacts shall be counted for the full ESL periods.

The reference service life (RSL) for a utility pole shall be specified and justified. The geographic regions of use shall be considered and declared when establishing the RSL. The RSL may be different for use in different geographic regions. The RSL shall be the same for all reported ESLs. RSLs shall be determined based on either historical use data (from one or more utilities or published studies) or commonly used or accepted industry testing data. Treated wood poles should also refer to the NSF PCR (section 7.1.4) for guidance in selecting an RSL. The EPD shall state the RSL quantity to the nearest year as well as the data, underlying assumptions, and

¹ According to Altec, an idling derrick uses as much fuel per hour as driving 30 miles. <https://www.altec.com/products/green-fleet/green-fleet-jems/>. If a derrick gets an average of 4.24 miles per gallon (<https://www.utilimarc.com/blog/benchmarking-study-digger-derrick/>), the average idling consumption is *approximately* 26.8 liters per hour (30 miles/4.24 mpg*3.78541 liters/gal). Then a somewhat arbitrary 50% uplift was applied to account for the fact that an operating engine consumes more fuel than an idling engine, or approximately 40 liters per hour.

² 50 minutes is approximate for pole installation, based on discussion within the PCR committee

resulting conclusions used to determine the RSL. Immediately following the RSL disclosure, the EPD shall include the following statement:

A variety of factors can have significant influence on the actual service life of a utility pole – such as pole material and geographic installation location (and associated climate-specific decay rates, corrosion, UV light exposure, frequency and magnitude of natural disasters, actual in-service forces applied to the pole, and other factors), and the rigor of installation, inspection, and maintenance programs. Organizations should incorporate their own expected service life considerations, including planned expansion that could replace poles prior to their end of life for line upgrades or rights of way, as they interpret the underlying assumptions and resulting conclusions of this EPD.

The default ESLs in this EPD are 40 years and 80 years. However, customers should understand that the ESL can be conceptualized to be a period of time for which a pole will be needed in a particular location. Therefore, customers can approximate custom impacts for other ESLs with this understanding.

Use or application of the installed product (B1)

Any activity related to product use and not included in stages B2-B7 shall be included in this stage. For treated wood poles, this may include treatment chemical releases and emissions as well as biogenic CO₂ release during use, if quantifiable. If preservatives or other treatment chemicals are applied in the use phase, an estimated average leaching rate (e.g., percentage leached per year of service life) should be declared. Other pole types are not known to have associated activity and may assume zero activity unless otherwise justified.

Maintenance (B2)

Utility poles may require periodic inspection, treatment, or repainting to maintain the specified load and strength characteristics over the ESL.

Inspection of the poles is typically carried out by the grid operator with each pole being inspected approximately every 10 years. The inspection crew typically uses a passenger vehicle to drive to the inspection site. However, since most of the inspection is done on foot with the vehicle not running and since crews can often inspect up to 60 poles per day, the fuel use per pole is considered insignificant and can be assumed negligible.

Wood poles shall include ground line treatments over the full ESL. The frequency and type of ground line treatments can vary widely based on region, original pole treatment type, and other factors. Ground line treatment activity data shall be based on the manufacturer's recommendations if primary data are not available. The EPD shall disclose any assumptions made for calculating the ground line treatment activity, including the frequency of treatment, the chemical(s) used for treatment, and the volume of chemicals used per treatment and per ESL.

Steel poles shall include repainting activity over the full ESL. The frequency and nature of repainting can vary widely based on region, original pole coating thickness and type, and other factors. Painting activity shall be based on the manufacturer's recommendations if primary data are not available. The EPD shall disclose any assumptions made for calculating the repainting activity, including the frequency of repainting, the type of paint used, and volume of paint used per repainting event and per ESL.

Other planned maintenance activities recommended by the manufacturer, if applicable, shall be included. If included, the EPD shall disclose any assumptions made for quantifying the activity, including the frequency, the materials and/or energy consumed per event, and quantity used per event and per ESL.

Consideration shall be given when special lift equipment is needed for doing maintenance on non-climbable poles.

Repair (B3)

Repair of utility poles is uncommon and expected to be insignificant. Zero activity may be assumed for this stage unless otherwise justified.

Replacement (B4)

Replacements for the duration of the ESL must be counted proportionally to the nearest hundredth of a product. For example, if an RSL of 60 years is used, then no replacements will be included for the 40-year ESL results, and 0.33 replacement poles must be included for the 80-

year ESL results (20 remaining years in the ESL divided by 60-year RSL). Replacements must include the sum of impacts from stages A1-A5 and C1-C4 multiplied by the number of replacements.

Refurbishment (B5)

Refurbishment is not expected to occur in the normal operation of the product. Zero activity may be assumed for this stage unless otherwise justified.

Operational energy use (B6) and operational water use (B7)

Electricity and water are not expected to be used to fulfill the load and strength criteria during the lifetime of the product. Zero activity may be assumed for this stage unless otherwise justified.

Deconstruction/demolition (C1)

The deconstruction/demolition stage shall include, as applicable, any ancillary materials, energy and/or water consumption.

Manufacturers shall assume the pole removal is completed with similar equipment as used during installation except for a shorter duration. Unless otherwise justified, manufacturers shall assume 20.1 liters (5.31 gallons) of diesel fuel is consumed when removing one pole. This default assumption is based on an approximate fuel consumption rate of 40.2 liters per hour for a typical digger derrick³ and approximately 30 minutes of equipment run time per removed pole⁴.

Transportation to waste processing/disposal (C2)

In the absence of primary data, the transport distance to waste processing or disposal shall follow the latest version of the US EPA WARM model (20 miles (32.2 km) as of this writing). Outside of North America, other appropriate regional or national assumptions may be used. The type of vehicle modeled shall be an average flatbed or semi-truck.

Waste processing (C3)

Manufacturers shall include any processing required to disassemble or prepare the pole for waste prior to final disposal.

Waste disposal (C4)

Non-metal pole manufacturers shall assume the pole is sent to a landfill, unless otherwise justified. Landfill processes shall be modeled based on the mass of distinct materials in the utility pole and availability of secondary data to model those materials.

Metal pole manufacturers shall assume the pole is recycled at a rate of 97%⁵, unless otherwise justified, with the remaining 3% sent to landfill. Landfill processes shall be modeled based on the mass of distinct materials in the utility pole and availability of secondary data to model those materials.

For treated wood poles, guidance on landfill modeling for biogenic carbon can be found in UL's PCR for Structural and Architectural Wood Products⁶, Appendix A. This guidance was provided based on data available for untreated wood products and should be used for treated wood poles only when end of life information specific to the treated wood pole evaluated in the EPD is not available.

Benefits and loads beyond the system boundary (D), Optional

Since some poles may be recycled or otherwise recovered at end of life, manufacturers may optionally declare such benefits and burdens, separately from the life cycle system. Refer to section 6.6 of the PCR Part A for specific requirements.

³ According to Altec, an idling derrick uses as much fuel per hour as driving 30 miles. <https://www.altec.com/products/green-fleet/green-fleet-iems/>. If a derrick gets an average of 4.24 miles per gallon (<https://www.utilimarc.com/blog/benchmarking-study-digger-derrick/>), the average idling consumption is *approximately* 26.8 liters per hour (30 miles/4.24 mpg*3.78541 liters/gal). Then a somewhat arbitrary 50% uplift was applied to account for the fact that an operating engine consumes more fuel than an idling engine, or approximately 40.2 liters per hour.

⁴ 30 minutes is approximate for pole removal, based on discussion within the PCR committee

⁵ American Iron and Steel Institute and Steel Manufacturers Association. Determination of Steel Recycling Rates in the United States. July 27, 2021. Assumes metal utility pole recycling is the same as structural steel. <https://www.steel.org/wp-content/uploads/2021/08/AISI-and-SMA-Steel-Recycling-Rates-Report-Final-07-27-2021.pdf>

⁶ UL. Product Category Rule (PCR) Guidance for Building-Related Products and Services, Part B: Structural and Architectural Wood Products EPD Requirements. UL 10010-09. Version 1.1. May 29, 2020.

Additional LCA calculation rules

N/A	Optional	Required	Indicate whether conformance is the manufacturer's choice or required for TRs/EPDs.
		X	ISO 21930: conformance is required by construction product manufacturers

Part B development information

Part B review panel	<p>This Part B was reviewed for conformance to ISO 14025, ISO 21930, and ACLCA PCR Open Standard v1.0 by the following parties:</p> <table border="0"> <tr> <td>Alex Mlsna, Chair Kimball International Alex.Mlsna@kimballinternational.com</td> <td>Hugues Imbeault-Tétreault, ing., M.Sc.A. Groupe AGÉCO hugues.i-tetreault@groupeageco.ca</td> <td>Rebe Feraldi, LCACP, CLAR Pacific Northwest National Laboratory rebe.feraldi@pnnl.gov</td> </tr> </table>	Alex Mlsna, Chair Kimball International Alex.Mlsna@kimballinternational.com	Hugues Imbeault-Tétreault, ing., M.Sc.A. Groupe AGÉCO hugues.i-tetreault@groupeageco.ca	Rebe Feraldi, LCACP, CLAR Pacific Northwest National Laboratory rebe.feraldi@pnnl.gov
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Open consultation	Sustainable Minds solicited public comments on this Part B from November 2, 2023 – December 2, 2023. This consultation period and list of parties to submit comments were made available to the review panel.			
Conflict statement	Funding sources used to develop this Part B were disclosed to the working group during the development process. The policies identified in Sustainable Minds' Program Governance were followed to identify and resolve any potential conflicts of interest.			
Sustainable Minds information	<p>This Part B was developed by Sustainable Minds and participating interested parties according to the Sustainable Minds Program Governance available at http://www.sustainableminds.com/transparency-report-program/how-it-works.</p> <p>For questions about this or another Part B, to submit comments on this Part B, or to obtain a template for developing a transparency report, contact us using the information on the following page: http://www.sustainableminds.com/contact-us.</p>			

Industry-wide TR/EPD additional rules

Minimum participation	A call for participation in an industry-average EPD shall be published in at least one industry trade publication. Direct outreach via email to interested parties is also encouraged. The minimum required level of market participation is 3 manufacturing companies. Each participating manufacturer shall provide primary manufacturing data. The industry-average EPD shall reflect production weighted-average of participating manufacturers and shall disclose the approximate percentage of market participation.
Retroactive pathway requirements	A manufacturer that did not participate in the original industry-wide EPD and wishes to retroactively participate in the industry-wide EPD may apply to do so through the Program Operator. The Program Operator shall notify the original sponsor(s) of the industry-average EPD. The original sponsor(s) will make a recommendation of eligibility to the Program Operator. If needed, the Program Operator, original sponsor(s) and new participant(s) shall confer in an effort to reach consensus on eligibility for retroactive participation. If eligibility is confirmed, the retroactive participant(s) shall submit their product-specific LCA primary data consistent with primary data of the original participants to the party responsible for collecting and averaging data for the industry-wide EPD. The party responsible for collecting and averaging data shall review the data to determine whether it falls within a reasonable range compared to existing results and make a recommendation to the Program Operator on whether and how to include the new data in an update of the EPD. The industry-wide EPD shall not be updated due to retroactive participation sooner than 12 months after the latest published update, though it may be updated earlier if approved by the original sponsor(s). Unless otherwise agreed by the original participants, the updated EPD will be paid for by the new participant(s).
Governance	<p>Data submitted for the industry-average EPD shall be collected by a party independent of the participants and sponsor(s) of the EPD. The responsible party will be responsible for secure storage and analysis of the participants' data. The responsible party shall only share aggregated data with the participants and sponsor(s) of the EPD to protect confidential information of the participants.</p> <p>Companies eligible for participation in the EPD study shall be allowed to attend project meetings for which all participants are invited, regardless of whether the company decides to participate in the EPD.</p>

	<p>Also refer to ISO 21930 section 5.4 for more information about EPD ownership and responsibilities.</p>
EPD updates	<p>Updates to the industry-average EPD may be needed prior to the original end of the validity period if there are 1) significant operational changes among the participants (e.g., technology, regulatory, or other changes that affect the efficiency of operations, method of manufacturing, the magnitude of input and output inventory flows, etc.), 2) Retroactive participants (see above), 3) significant changes to the industry supply chain, or 4) significant changes to scenario assumptions downstream of the manufacturing process. The EPD sponsor(s) and/or participants shall notify the Program Operator of any changes that could result in significant changes to the disclosed environmental performance results of the EPD.</p>
Comparison of company-specific EPDs to industry-average EPDs	<p>The participants of the industry-wide EPD will determine the method used to determine quantitative uncertainty (e.g., Monte Carlo method). To demonstrate improvement, company-specific EPD results must be statistically significantly lower than the industry-wide EPD results, with a confidence interval of 95%. Any improvement or reduction that is not statistically significantly lower or higher than the benchmark, with a confidence interval of 95%, is considered equivalent to the benchmark.</p> <p><u>LCIA method & version # used for comparison:</u> All comparisons to the industry-average results must use the same method and version number as the industry-wide study.</p> <p><u>Threshold of performance improvement for each impact category:</u></p> <p>10%+ reduction in global warming 5%+ reduction in at least two additional impact categories</p>