



# Carbon Footprint Reduction Certification per product lifecycle stage

**March 2023**



## 1.0 Background

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Carbon Footprint Reduction certification demonstrates an organization's commitment to integrating improvements to a product's design or manufacturing process's energy consumption and source to reduce the carbon footprint of their products. The certification will focus on the carbon footprint reduction within a single stage of the product's life cycle.

For a product's raw material improvements, a company must demonstrate that the product is delivering the same or comparable product with a design improvement that reduced the carbon footprint. This transition to a lower carbon raw material can include transition to recycled content, and/or reductions or changes in raw materials in the product. As part of GreenCircle's evaluation process, GreenCircle will obtain a complete understanding of the product's bill of material/recipe and material use as compared to a previous version of the product. As part of the analysis, GreenCircle will also review the inventory analysis of the material(s) and certify carbon footprint reduction percentage in the raw material stage.

For manufacturing process improvements, a company must demonstrate that conservation measures have been implemented to reduce the carbon footprint through energy usage as compared to a baseline year benchmarked to production. As part of GreenCircle's evaluation process, a detailed analysis of the organization's operations, energy consumption, energy efficiency improvements, carbon-free electricity or renewable energy use, and greenhouse gas emissions will be conducted. Certification can cover reductions in Scope 1, and Scope 2 emissions as defined by the Greenhouse Gas (GHG) Protocol. By verifying implemented conservation measures at the facility, GreenCircle will confirm reductions in energy usage and certify carbon footprint reduction percentage based on this manufacturing energy usage reduction as well as the energy source for electricity (Scope 2). GreenCircle can further allocate this reduction to the product manufactured at this facility, which demonstrates the carbon footprint reduction of the product during the manufacturing stage. At this time GreenCircle does not recognize any carbon offsets for reducing Scope 1 emissions but continues to evaluate the applicability to the reduction of a product's carbon footprint.

GreenCircle's Certified Environmental Facts (CEF) label will highlight the Carbon Footprint Reduction of the product through either the raw material stage or the manufacturing stage. In order to achieve CEF certification for the raw material stage, there must be at minimum one manufacturing specific attribute on the label, such as Energy Usage Reduction, Renewable Energy Usage, Water Usage Reduction, Waste to Landfill Reduction or Waste Diversion from Landfill. In order to achieve CEF certification for the manufacturing stage, there must be at minimum one manufacturing



specific attribute on the label either Energy Usage Reduction and/or Renewable Energy Usage or Carbon-Free Electricity Usage. Please refer to the GreenCircle Sustainable Manufacturing Practices Audit Plan for more information.

## 2.0 Goal

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The goal of the Carbon Footprint Reduction certification is to verify that a company has taken measures in product design or manufacturing to reduce the carbon footprint of a product.

## 3.0 Company Qualifications

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Companies who have implemented product raw material improvements or manufacturing process improvements to reduce their carbon footprint will be eligible for Carbon Footprint Reduction certification. During the proposal development process, GreenCircle will conduct initial meetings with the Client contact to understand the raw material design changes or manufacturing energy usage improvements to verify if the proposed product will most likely qualify for an audit and possible certification. It is not guaranteed that a product will be certified for Carbon Footprint Reduction until a thorough audit is completed by GreenCircle.

## 4.0 Documentation Requirements

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To qualify for certification a company must provide the requested data for two twelve month periods. GreenCircle will need the following information for a baseline year as well as the most recent year's data to validate reductions based on implemented conservation measures. A baseline year should be within five years of the most recent certification year. GreenCircle requires a minimum six months of data, for new product or processes related to the attributes that are being assessed.

Product raw material improvements translated to carbon footprint reductions will be validated using the following information:

- Product recipe(s)/bill of materials detailing the amount and type of raw materials used to manufacture the product (percent by weight basis); including the type of each raw material.
- Previous product recipe(s)/bill of materials detailing the amount and type of raw materials used to manufacture the product (percent by weight basis); including the type of each raw material.
- Supplier information for all materials or applicable evidence to document and validate the material change.



- If suppliers have changed, documentation on the driver for the supplier change, and if there is a shift in technology used by the new supplier compared to the previous supplier.
- Documentation of the global warming potential (GWP) (carbon footprint) raw material data set related to the material(s) being evaluated. This can include carbon emission material reference sheets or Life Cycle Assessment (LCA) software/data bases that documents the analysis as related to the material change.

Manufacturing process improvements or conservation measures to reduce the carbon emissions will be validated using the follow information:

- Minimum two years of electricity, natural gas, and fuel source (oil, propane, etc., if applicable) consumption data must be collected and analyzed to confirm the carbon emissions reduction and energy usage reduction claims of the manufacturing facility. GreenCircle will also request copies of utility bills.
- Data and documentation to validate the type, output size, and location of carbon-free electricity or renewable energy sources utilized on site to confirm the carbon emissions reduction. For a company that is utilizing carbon-free or renewable energy for electricity (Scope 2 reductions), the following energy systems/contracts are acceptable:
  - Onsite renewable energy generation which are owned and operated by the company and documentation that the company owns the renewable energy credits (REC's)
  - Documented carbon-free energy purchase through a power purchase agreement (PPA) in which the company owns the REC's or Emissions Free Energy Certificates (EFECs)
  - Virtual Power Purchase Agreements (VPPA) with a long term contract (ten or more years) that includes proof of ownership and retirement of the REC's
  - Green Supply Contract with utility company or electricity provider, RECS must be Green-e certified or equivalent
  - Offsite carbon-free electricity or renewable energy purchased REC's; must be Green-e Energy certified or equivalent
- The facility will also be required to submit documentation to verify energy reduction efforts within the manufacturing facility. This documentation request could include purchase orders, paid invoices, profit impact reports, etc to demonstrate the following:
  - Operational changes
  - Behavioral changes
  - Building and equipment upgrades
  - Thermal processes/systems electrification or waste heat recovery



- Minimum two years of total production data (all products) at the facility must also be collected to benchmark the operations and further allocate the carbon footprint reduction to a product.
- If multiple products are being manufactured, GreenCircle will need attestation that the products are manufactured in a similar process. If applicable additional documentation to allocate the energy usage by production line may be requested.
- Bill of materials or product recipes, percent by weight and base material, which will be used to define the boundaries of the product family and evaluate the impact of future products.

## 5.0 Audit and Certification Process

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### 5.1 Data Collection

Once the proposal and certification agreement are signed, GreenCircle will prepare a data request and conduct a conference call with the contact(s) to discuss the required data, GreenCircle's audit process and project schedule. Through this initial project meeting, GreenCircle will gain an understanding and obtain information on energy efficiency practices and/or renewable energy usage on-site.

GreenCircle will provide an initial data request to be completed by the facility contact(s). See Section 4.0 Documentation Requirements for specific data that will be requested in the data collection stage.

### 5.2 Site Audit

To validate manufacturing process improvements, GreenCircle will conduct a site visit of the manufacturing facility and verify the details of the manufacturing processes pertinent to the specific site. GreenCircle will conduct interviews with representatives at the facility as part of the audit process as well as review any additional data needed to complete the certification. GreenCircle will walk through the facility, conduct a visual inspection, and collect photo documentation to verify the processes and the implemented energy conservation measures and/or renewable energy usage associated with carbon footprint reduction in the manufacturing process.

### 5.3 Carbon Footprint Reduction Calculations

**For product raw material improvements,** GreenCircle will conduct a thorough review of the product recipe(s)/bill of materials for the current product and the previous product to be compared, along with the GWP (CO<sub>2</sub>) equivalent data set related to the material. GreenCircle will then calculate the percent carbon footprint reduction as related to the raw material stage of the product's life cycle.



**For manufacturing process improvements,** GreenCircle will conduct a thorough review of utility data for energy reduction initiatives as well as implemented carbon-free or renewable energy usage for electricity for both the baseline year and certification period. GreenCircle will validate utility data by collecting invoices from utility vendors and also verify conservation measures were implemented (per documentation requirements above) that directly resulted in energy usage reductions throughout the facility as a part of this analysis. GreenCircle will then calculate (benchmarked to production) the percent reductions of Scope 1 and/or Scope 2 emissions and in turn, carbon footprint reduction from the evaluation period as compared to the baseline year. Utilizing a product allocation of the manufacturing facility's total production, GreenCircle can calculate the percent carbon footprint reductions on a product unit basis as related to the manufacturing stage of the product's life cycle.

#### **5.4 Manufacturing Attributes**

The selected manufacturing specific attributes to be audited for the CEF label, such as Energy Usage Reduction, Carbon Free Electricity Usage, Renewable Energy Usage, Water Usage Reduction, Waste to Landfill Reduction or Waste Diversion from Landfill, will follow the process outlined in GreenCircle's Sustainable Manufacturing Practices Audit Plan.

#### **5.5 Finalize Certification**

GreenCircle requires a minimum of a 1% reduction to receive certification. GreenCircle certifies to a minimum by rounding-down all reductions and therefore reductions less than 1% will not result in a certification.

Upon verification of the carbon footprint reduction claims, GreenCircle will issue a GreenCircle Certified, LLC certificates and marks for the product's carbon footprint reduction. The certificate will document that an independent evaluation of the carbon footprint reduction claim has been conducted on behalf of the Client for the specified product, during a specified stage in the product's life cycle. GreenCircle will prepare a written report on the audit process and findings and provide this report to the Client. GreenCircle will list the final certificates on the GreenCircle Certified Product Database and provide GreenCircle marks for use in marketing.

### **6.0 Annual Recertification Process**

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The Certified Environmental Facts certification is valid for three-years, with data verification through an annual check in. Continuous improvement must be



demonstrated within three years of the initial certification period for continued recertification. It is important for GreenCircle to evaluate any changes within the operations or manufacturing processes to ensure continued compliance with the established criteria. Completion of recertification ensures continued transparency and further use of the GreenCircle mark.

## 7.0 Complaints, Appeals, and Disputes

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GreenCircle must be contacted immediately if there is a complaint, appeal, and or dispute brought against a certification that GreenCircle has verified. GreenCircle will follow the Appeals, Complaints, and Disputes procedure to review and resolve the issue.

## 8.0 Guidelines for Private Label User

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The Carbon Footprint Reduction certification is for the exclusive use of the Client. Companies that produce private label products that wish to use this certification will require any private label customers or downstream re-sellers of the certified product(s) who desire to utilize the GreenCircle Carbon Footprint Reduction certification, to enter into a separate Licensing Agreement with GreenCircle regarding the use of the GreenCircle Mark and/or Label on private label product and promotional materials. Please contact GreenCircle directly for more information.

## 9.0 Labeling Requirements

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The Client agrees to promptly cease display and use of the GreenCircle Certified, LLC mark: (1) Upon expiration of the certification period; (2) If Client is no longer in compliance with one or more of the terms and conditions of the GreenCircle Certification Agreement. Please reference the **GreenCircle Certified Mark Usage Guidelines** for further details and more information on using the mark. The Client shall take caution to ensure that the GreenCircle Certification mark is not associated with products and/or operations which do not comply with the GreenCircle Certification System (GCCS). The Client will be asked to remove the GreenCircle mark immediately if it is found that they have applied the mark on a non-conforming GCCS product and/or operation. If the Client fails to remove the misused mark, an investigation will be conducted pertaining to the misuse, in which the full cost of the investigation shall be borne by the Client. The Client shall not allow the GCCS Certification mark to remain on non-conforming products offered for sale. Such action could invite prosecution under U.S. Trademark statutes or attract other penalty provisions in other U.S. or State law.



## 10.0 Key Terminology

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**Audit Plan:** Specifies how GreenCircle intends to conduct a particular audit. Our audit plan describes the activities we intended to carry out in order to achieve our audit objectives.

**Carbon Footprint:** The level of carbon dioxide generated by a process, facility, or in the production of a product.

**Global Warming Potential:** The heat absorbed by any greenhouse gas in the atmosphere, as a multiple of the heat that would be absorbed by the same mass of carbon dioxide. It is an indicator that allows the comparison of the global warming impacts.

**Green Supply:** This is Power Purchase Agreement with an electricity generator providing power through renewable electricity; which is associated with a Renewable Energy Credit (REC) to claim the renewable energy usage.

**Product Family:** A product, that provides the same service or consumer function, which utilizes the same bill of materials with minor deviations such as color, scent, flavor or sizing. If the deviation of weight is less than 5% due to color, scent or flavor additives then the certification results can be combined and presented as a product family; with certification to a minimum. If the product has multiple sizes, GCC will review the deviation of raw materials proportional to total weight. If the deviations of raw materials are less than 10% due to sizing, then this is within the product family and the certification results can be combined and presented as a product family; with certification to a minimum.

**Power Purchase Agreement:** This is a long-term contract between an electricity generator and a customer, usually a utility, government or company. PPAs may last anywhere between 5 and 20 years, during which time the power purchaser buys energy through an arrangement in which a third-party developer installs, owns, and operates an energy system on a customer's property.

**Renewable Energy:** Energy from a source that is not depleted when used. This includes wind, solar photovoltaic, and hydro energy.

**Scope 1 Emissions:** All direct GHG emissions.

**Scope 2 Emissions:** All indirect emissions, such as the extraction and production of purchased electricity, heat, or steam.





**Scope 3 Emissions:** Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities not covered in Scope 2, outsourced activities, waste disposal, etc.

**Virtual Power Purchase:** A long term contract, typically 10 to 20 years, between a developer of a renewable energy project and an energy buyer. This provides a Renewable Energy Credit (REC) from a specific renewable energy project located off property.

## 11.0 Reference Documents

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**The Greenhouse Gas Protocol** - A Corporate Accounting and Reporting Standard - World Resource Institute

**IPCC Guidelines for National Greenhouse Gas Inventories** - The International Panel on Climate Change

**ISO 14064**, Parts 1-3, International Standard for GHG Emissions Inventories and Verification - The International Standards Organization

**ISO 14067: 2018** , Carbon footprint of products – Requirements and guidelines for quantification

## 12.0 Complaints, Appeals and Disputes

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GreenCircle must be contacted immediately if there is a complaint, appeal and or dispute brought against a certification that GreenCircle has verified. GreenCircle will follow the Appeals, Complaints and Disputes procedure to review and resolve the issue.

## 13.0 Guidelines for Private Label User

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Client will advise any private label clients, or downstream re-sellers of the product certified to enter into a separate agreement with GreenCircle regarding the use of the GreenCircle Mark on private label product and promotional materials. Please contact GreenCircle directly for more information.

## 14.0 Labeling Requirements

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The client agrees to promptly cease display and use of the GreenCircle Certified, LLC mark: (1) Upon expiration of the certification period; (2) if client is no longer in



compliance with one or more of the terms and conditions of the GreenCircle Certification Agreement. Please reference the **GreenCircle Certified Mark Usage Guidelines** for further details and more information on using the mark. The client shall take caution to ensure that the GreenCircle Certification mark is not associated with products and/or operations which do not comply with the GreenCircle Certification System (GCCS). The client will be asked to remove the GreenCircle mark immediately if it is found that they have applied the mark on a non-conforming GCCS product and/or operation. If the client fails to remove the misused mark, an investigation will be conducted pertaining to the misuse, in which the full cost of the investigation shall be borne by the client. The client shall not allow the GCCS Certification mark to remain on non-conforming products offered for sale. Such action could invite prosecution under U.S. Trademark statutes or attract other penalty provisions in other U.S. or State law.

### Amendment History

Date	Issue	Summary of Amendments
1/9/2023	Rev. 0	Separation from Carbon Emissions Audit
3/31/2023	Rev. 1	Expanded definitions for manufacturing reductions

**Certification Officer:** Michelle Borame