



Sustainable Manufacturing Practices Certification

**Standard Audit Plan
April 2024**



1.0 Background

Sustainable Manufacturing Practices certification demonstrates an organization's commitment to integrating operational improvements that reduce the environmental impacts of manufacturing processes and the overall life cycle impacts of the products produced at these facilities. Using GreenCircle Certified, LLC's (GreenCircle's) extensive expertise in manufacturing processes and audits, the Sustainable Manufacturing Practices certification audit plan was developed to evaluate an organization's efforts to reduce energy, water, waste, and carbon footprint as compared to a baseline year benchmarked to production.

GreenCircle will conduct the audit for Sustainable Manufacturing Practices Certification in accordance to the requirements and methods set forth in this audit plan and in GreenCircle's Certification Scheme; in compliance with ISO17065:2012. As part of GreenCircle's evaluation process, GreenCircle will audit and certify a manufacturing facility's energy efficiency practices, carbon emissions reductions, water conservation measures, and decrease or elimination of waste. By verifying implemented conservation measures at the facility, GreenCircle will verify reductions in attributes as compared to a previous baseline year at the facility benchmarked to production and certify Sustainable Manufacturing Practices percentages. As this process requires a site visit to complete, GreenCircle could also conduct a Waste Diversion from Landfill analysis as a part of a Sustainable Manufacturing Practices certification. See GreenCircle's Waste Diversion from Landfill Audit Plan for more information on how this certification is conducted. This document explains GreenCircle's overall audit process in performing a Sustainable Manufacturing Practices certification as well as how Sustainable Manufacturing Practices should be qualified and quantified.

2.0 Company Qualifications

Companies who have implemented conservation measures to reduce their energy, water, waste and/or carbon footprint will be eligible for Sustainable Manufacturing Practices certification. During the proposal development process, GreenCircle will conduct initial conversations with the appropriate Client contacts to understand the conservation measures implemented and reduction measures in place to verify if the proposed facility will qualify for an audit and possible certification. It is not guaranteed that a facility will be certified for Sustainable Manufacturing Practices until a thorough audit is completed by GreenCircle.



3.0 Goal

To certify a manufacturer has implemented conservation measures and reduced their energy, water, waste and/or carbon emissions as compared to a baseline year, benchmarked to production. GreenCircle will then certify the percentage reductions of these implemented sustainable manufacturing practices.

The six attributes that can be audited are:

- Energy Usage Reduction
- Carbon Emissions Reduction
- Water Usage Reduction
- Waste to Landfill Reduction
- Total Waste Reduction
- Carbon-Free/Renewable Energy Usage
- Carbon-Free/Renewable Electricity Usage

In addition, the verification of ISO14001:2015 and 9001:2015 certifications can be included.

4.0 Documentation Requirements

GreenCircle will need 12 months of documentation for a baseline year as well 12 months of documentation from the most recent year to benchmark the facility's operations and validate reductions based on implemented conservation measures. The baseline year typically coincides with the baseline year for company sustainability programs and will be determined at the time of proposal development. A baseline year should be within five years of the most recent certification year. Energy, carbon footprint, water, and waste reductions will be validated and require either process changes or conservation measure implementation to be valid.

- 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 footprint reduction and energy usage reduction claims of the manufacturing facility.
- 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
- Data and documentation to validate the type, output size, and location of carbon-free 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 usage, such as biomass
 - Onsite renewable energy generation which are owned and operated by the company and documentation that the company owns the renewable energy credits (REC's) or documented through a power purchase agreement (PPA) in which the company owns the REC's
 - Offsite renewable/ carbon-free energy purchase through a power purchase agreement (PPA) that also conveys the ownership of the carbon-free energy credits such as RECs, EFECs, or Guarantees of Origins
 - Documentation of REC/ EFEC retirement is required to ensure the purchaser can accurately claim the usage of the renewable energy.
 - Virtual Power Purchase Agreements (VPPA) with a long-term contract (often 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 an equivalent registry program
 - Unbundled purchased RECs/EFECs; must be Green-e Energy certified or an equivalent registry program
- Minimum two years of total water consumption data must be collected and analyzed. The facility will also be required to submit documentation of water consumption reduction efforts within the manufacturing facility. This documentation could include: purchase orders, profit impact reports, etc.
- Minimum two years of total waste data must be collected and analyzed. The facility will also be required to submit documentation to verify waste reduction activities efforts within the manufacturing facility. This documentation could include: purchase orders, load tickets, material management organization receipts, and weigh tickets, etc.
- Minimum two years of total production data (all products) at the facility must also be collected to benchmark the operations.
- Data clearly describing the amount and type of materials being recycled throughout the facility. A list of any source reduction practices implemented as well as a list of all material management companies used to haul materials from site to recycling, composting, waste-to-energy, or landfill facilities. (Only applicable if a Waste Diversion from Landfill assessment is being completed).
- Data and documentation from the material management organizations that handle the client's waste. GreenCircle will need to understand and validate how



the materials are being handled after they leave the facility and if they are acceptably diverted from landfill by the material management organizations based on GreenCircle’s “acceptable means of diversion” definitions. (Only applicable if a Waste Diversion from Landfill assessment is being completed).

- Contact information for each material management organization and any information of materials management organization variability, including frequency of change in organizations, any organizations that may be acquired in the near future, etc. (Only applicable if a Waste Diversion from Landfill assessment is being completed).
- Copies of purchasing slips, load tickets, and waste bills verifying the transactions between the company and the materials management organizations as well as the amount of material being handled by each. (Only applicable if a Waste Diversion from Landfill assessment is being completed).
- ISO 14001:2015 certificate or ISO9001:2015 to verify the manufacturing facility has completed a recent certification, if applicable.
- Any additional facility specific data that needs to be obtained in order to certify a sustainable attribute of the manufacturing facility, such as carbon-free electricity usage.
- A company must provide GreenCircle access for a site visit (virtually or in-person, per GreenCircle’s determination) of the processing or manufacturing facility(ies).

5.0 Audit and Certification Process

5.1 Data Collection

Once the proposal and certification agreement are signed by the manufacturer, GreenCircle will conduct an initial project meeting, via video or conference call, with contact(s) at each manufacturing facility to discuss the required data, GreenCircle’s Audit Plan and project schedule. GreenCircle will gain an understanding of the material flows and obtain information on energy efficiency practices, carbon emissions reductions, water conservation measures, and decrease or elimination of waste.

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

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 Sustainable Manufacturing Practices certification. GreenCircle will walk through the facility; conduct a visual inspection and collect photo documentation to verify the processes and analyze the implemented energy, water and waste conservation measures associated with sustainable manufacturing practices. A company must also provide GreenCircle access for a site visit to the processing or manufacturing facility. GreenCircle will determine if this requirement will be met through an on-site visit or a virtual visit for visual verification of the recycled content material and manufacturing process.

5.3 Sustainable Manufacturing Practices Calculations

GreenCircle will conduct a thorough review of utility data for energy, water, and waste reduction initiatives for both the baseline year and certification period. GreenCircle will validate utility data by collecting invoices from utility vendors and verify conservation measures were implemented (per documentation requirements above) that directly result in energy, water, and waste savings throughout the facility as a part of this analysis.

GreenCircle will then calculate (benchmarked to production) the percent reductions of energy, water, waste, and carbon emissions from the certification period as compared to the baseline year. Carbon emissions calculations will align with the guidance of the GHG Protocol and based on the applicable carbon dioxide equivalency factor for each energy source.

After completion of the GreenCircle Sustainable Manufacturing Practices audit process, GreenCircle will certify the percent reduction of the energy, water, waste, and carbon emissions (as applicable) as benchmarked to total facility production.

5.4 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 sustainable manufacturing practices claims, GreenCircle will issue a GreenCircle Certified, LLC Certificate and Mark(s) for the audited manufacturing facility. The certificate will document that an independent evaluation of the Sustainable Manufacturing Practices claims has been conducted on behalf of the company for the audited manufacturing facility. All certificate holders must notify



GreenCircle Certified, LLC of any significant changes in products or operations that could alter any of the claims detailed in certification.

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

The Sustainable Manufacturing Practices certification is valid for three-years, with data verification through an annual check in. All certified claims are verified annually to confirm any changes that may impact the attributes certified and will include a collection of sample documentation. If any attribute deviates by greater than five percent, GreenCircle will outline the necessary documentation requirements for recertifying the impacted attributes. A full analysis of an attribute during a check in, or adding new attributes, may result in additional fees required for the review of the additional documentation.

It is important for GreenCircle to evaluate any changes within the operations or manufacturing processes to ensure the accuracy of all sustainability claims. After the three-year, a full recertification of all attributes is required. Completion of recertification ensures continued transparency and further use of the GreenCircle mark.

7.0 Complaints, Appeals and Disputes

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

The Sustainable Manufacturing Practices 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 Sustainable Manufacturing Practices 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



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 the certification requirements in this audit plan or the GreenCircle terms and conditions 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 Scheme (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

Biomass: The biodegradable fraction of products, waste and residues from a biological original such as forestry, vegetation, or animal substances. The carbon in biomass is of a biogenic origin—as it was recently contained in living and breathing tissues—while the carbon in fossil fuels has been trapped in geologic formations for millennia. Because of their biogenic origin, CO₂ emissions from biomass fuels are treated differently from fossil fuel combustion emissions per the GHG Protocol.

Bioliqid: The liquid fuel for energy purposes such as electricity and heating and cooling, which is produced from biomass.

Carbon Footprint: The level of carbon dioxide generated by a process, facility, or in the production of a product. GreenCircle will conduct an audit to verify the reduction is Scope 1 and Scope 2 emissions per GHG Protocol definitions.

Carbon Free Electricity: Electricity that does not produce CO₂ emissions per the GHG protocol. This includes nuclear technology and renewable energy sources. Methane, a biogenic gas, that is produced from resources such as landfill gas, municipal waste or digester gas and burned to generate electricity or steam is not recognized by GreenCircle as a carbon-free fuel source.



Cogeneration: Producing both electricity and steam/heat using the same fuel supply.

Green Supply: This is Power Purchase Agreement with an electricity generator providing power through renewable/ carbon-free electricity; which is associated with a Renewable Energy Credit (REC) or a Emissions Free Energy Credit (EFEC) to claim the renewable energy usage.

Original Equipment Manufacturer: A company that acquires a product or component and reuses or incorporates it into a new product with its own brand name.

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, biofuels, geothermal and water/hydro energy.

Scope 1 Emissions: All direct GHG emissions generated by a facility.

Scope 2 Emissions: All indirect emissions used by a facility, 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/ carbon-free energy project and an energy buyer. This provides a Renewable Energy Credit (REC) or an Emissions Free Energy Credit (EFEC) from a specific renewable/ carbon-free energy project located off property.

Waste Diversion: The prevention and reduction of generated waste through source reduction, recycling, reuse, composting and other means as defined by GreenCircle's acceptable means of diversion as listed above.

Zero Waste to Landfill (Landfill-Free): Zero waste is disposed directly to landfill or to incineration without energy recovery by the particular facility, except where legal



requirements specify that regulated wastes must be disposed of in a landfill or incinerator without energy recovery. In order to be certified zero waste to landfill, an organization must send 100% of the waste streams to a downstream material management organization with the intent to divert this material. GreenCircle acknowledges the potential for contaminants to be co-mingled with diverted materials and has an allowance of up to 2% by weight of total residuals off of the downstream material processors for a facility to still be considered zero waste to landfill. If there is more than 2% of weight residuals generated from the downstream processors, an organization cannot claim zero waste to landfill and will be issued a landfill diversion rate percentage.

11.0 Reference Documents

GreenCircle Certification Scheme, GCC-OPS-03-1, Revision 6 – Outlines the certification process and GreenCircle’s Management System

ASTM E2129:2018—Standard Practice for Data Collection for Sustainability Assessment of Building Products to assess the sustainability of products and manufacturing operations

The Greenhouse Gas Protocol—A Corporate Accounting and Reporting Standard, World Resource Institute

The Federal Trade Commission’s Green Guides (2012)—Guides for the Use of Environmental Marketing Claims

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

ISO 14064:2018—International Standard for GHG Emissions Inventories and Verification – The International Standards Organization

ISO17020: 2012 Conformity assessment -- Requirements for the operation of various types of bodies performing inspection, The International Standards Organization. This International Standard defines the requirements for the operation of various types of bodies performing inspection. GreenCircle adheres to these requirements in the development of the certification process and audit plans.



ISO 14021:2016 Environmental labels and declarations -- Self-Declared environmental claims (Type II environmental labeling), The International Standards Organization

ISO 17065:2012 Conformity assessment -- Requirements for bodies certifying products, processes, and services, The International Standards Organization. This International Standard defines the requirements for bodies certifying products, processes and services. GreenCircle adheres to these requirements in the development of the certification process and audit plans.

Amendment History

Date	Issue	Summary of Amendments
1/22/2013	Rev. 0	Official issue date of document.
11/15/2015	Rev. 1	Update language and definitions.
5/20/2022	Rev. 2	Editorial updates
5/1/2023	Rev. 3	Added language for carbon free energy usage
4/1/2024	Rev. 4	Update for compliance to Certification Scheme

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