



# **Certified Environmental Facts: Carbon Footprint Reduction Certification per Product Lifecycle Stage**

**Standard Audit Plan  
April 2024**



## 1.0 Background

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A Certified Environmental Facts: Carbon Footprint Reduction Certification demonstrates an organization's commitment to integrating improvements to a product's design or manufacturing process's energy consumption or 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 and will be presented on GreenCircle's Certified Environmental Facts (CEF) label. GreenCircle will conduct the audit for Certified Environmental Facts Certification in accordance with the requirements and methods set forth in this audit plan and in GreenCircle's Certification Scheme; in compliance with ISO17065:2012. GreenCircle's Certified Environmental Facts Certification Standard Audit Plan and GreenCircle Sustainable Manufacturing Practices Audit Plan will also be utilized with this audit plan for more details on other attributes assessed for the CEF label.

A carbon footprint reduction via product design is achieved via a product's raw material improvements. The company must demonstrate that the product is delivering the same functionality and purpose 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 reducing its energy usage or intentionally shift to energy sources with reduced GHG emissions as compared to a baseline period benchmarked to production. As part of GreenCircle's evaluation process, a detailed analysis of the organization's operations, energy consumption, energy efficiency improvements, use of carbon-free electricity or energy sources with reduced GHG emissions, and greenhouse gas emissions will be conducted. All manufacturing facilities producing the product must be included in the carbon footprint reduction calculation for the product in the manufacturing stage. Certification can include reductions in Scope 1 and/or 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. Currently, GreenCircle does not recognize any carbon offsets for reducing Scope 1 and Scope 2 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:

- 1) To achieve **a carbon footprint reduction in the raw material stage**, there must be at minimum one manufacturing specific attribute on the label for each site manufacturing the product, such as Energy Usage Reduction, Renewable Energy Usage, Water Usage Reduction, Waste to Landfill Reduction or Waste Diversion from Landfill.
- 2) To achieve **carbon footprint reduction in the manufacturing stage**, there must be at minimum one manufacturing specific attribute on the label for each site manufacturing the product: Energy Usage Reduction, Renewable Energy Usage, or Carbon-Free Electricity Usage. The CEF Certification can also include additional attributes such as Water Usage Reduction, Waste to Landfill Reduction and/or Waste Diversion from Landfill, but these attributes will not fulfill the requirement for a manufacturing specific attribute.

## 2.0 Goal

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The goal of the Certified Environmental Facts Certification with a Carbon Footprint Reduction attribute 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 that have implemented product raw material improvements or manufacturing process improvements to reduce their carbon footprint will be eligible for Certified Environmental Facts Certification with a Carbon Footprint Reduction attribute. During the proposal development process, GreenCircle will conduct initial meetings with the Company 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.

GreenCircle can evaluate carbon footprint reduction of a product based on emission reductions in the raw material stage if a client is able to provide complete bill(s) of



materials for the product(s) being certified and associated data and documentation that provides the carbon footprint of all materials and product components.

- Accessories, beyond the base product/model, that are externally manufactured and account for no more than 5% of total mass can be excluded. This allows for the certificate to be applied when the base product is packaged with various accessory sets for the consumer.

GreenCircle will evaluate the carbon footprint reduction of a product based on emission reductions in the manufacturing stage for manufacturing processes in the manufacturer's direct financial or operational control if a client is able to provide the primary energy usage data at all manufacturing facilities that the product is produced for two twelve-month periods.

- Externally produced components and accessories, if no more than 5% of total mass, are outside the boundary of this scope. This allows for the certificate to be applied when the base product is packaged with various accessory sets for the consumer.
- Packaged accessories, if no more than 5% of total mass, are outside the boundary of this scope. This allows for the certificate to be applied when the base product is packaged with various accessory sets for the consumer.
- Supplemental production facilities that account for less than 10% of total production, by weight or volume, can be excluded pending GreenCircle's review of evidence and validation that the 10% determination methods and assumptions are reasonable.
- Final assembly or converter facilities that account for less than 10% of total manufacturing energy usage, by product allocation, can be excluded pending GreenCircle's review of evidence and validation that the 10% determination methods and assumptions are reasonable.
- Packaging that occurs in another facility from product manufacturing is also outside of the boundary of this scope.
- For evaluations of assembly facility, the assessment will focus on the emissions reductions in the assembly processes of the final product at the facility.

## 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 period as well as the most recent year's data to validate reductions based on implemented conservation measures. A baseline period should be within five years of the most recent evaluation period. GreenCircle requires a minimum of six months of steady-state or



representative production 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 verified 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 all material(s) in the two product recipes being evaluated. This can include carbon emission material reference sheets or Life Cycle Assessment (LCA) software/data bases that document the analysis as related to the material change.

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

- Minimum two years of electricity, natural gas, and fuel source (oil, propane, etc., if applicable) consumption data must be provided for the total facility for GreenCircle to analyze for a carbon emissions reduction of the manufacturing facility. GreenCircle will also request copies of utility bills.
  - This should include auxiliary fuels at site (break rooms, cafeteria, warehouse), per the GHG Protocol since the manufacturing attribute on the CEF label will be representative of the entire facility. GreenCircle will review documented assumptions made, and define boundaries for product allocation, which may include excluding this energy if it is less than 10% of the total energy usage of the facility.
  - Energy usage for raw material *on-site storage* is part of the manufacturing process and is included in the carbon footprint calculation. Off-site storage is excluded.
- Data and documentation to validate the type, output size, and location of carbon-free electricity or renewable energy sources utilized on site.
- 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 combustion source, such as biomass
- Onsite renewable energy generation which are owned and operated by the company and documentation that the company owns the associated renewable energy credits (RECs).
  - Documentation that the RECs have been retired (i.e. not used or claimed by any other party) is also required.
- Documented carbon-free energy purchase through a power purchase agreement (PPA) that also conveys the ownership of the carbon-free energy credits such as RECs, Emissions Free Energy Certificates (EFECs), or Guarantees of Origins
  - Documentation of REC retirement is required to ensure the system owner is not retaining the environmental credit for clean energy and the purchaser can accurately claim the usage of the energy.
- Virtual Power Purchase Agreements (VPPA,) or off-site PPA, with a long-term contract (ten or more years) that includes proof of ownership and retirement of the associated RECs.
- 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 RECs; must be Green-e Energy certified or equivalent.
  - Documentation of the retirement of the RECs is also required.
- The facility(ies) will be required to submit documentation to verify energy reduction efforts within the manufacturing facility(ies). 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, including production of all products, at the facility(ies) must also be provided for GreenCircle to benchmark the operations and further allocate the carbon emissions reduction to a product.
- If multiple products are being manufactured, the energy usage by product (weight or unit) must be provided to GreenCircle to properly allocate.
  - Products within 10% energy draw: GreenCircle can utilize the production by weight to verify carbon footprint reduction/product. Evidence must be submitted to indicate the products manufactured are within 10% energy draw
  - Product families within 10% energy draw: GreenCircle can group the production by weight of all products in the product family and verify a carbon footprint reduction/product family. The grouping of product





families must include a description of production methods and product types which will be used to define the boundaries of the product family and evaluate the impact of future products.

- Products not within 10% energy draw: Client must provide an allocation of the total energy usage of the facility(ies) by production line using the most accurate method available, if weight is not an appropriate correlation to energy usage, which may include:
  - Sub-metering of energy usage data
  - Financial data
  - Process flow diagram with energy inputs
  - Production run times
  - Facility area usage by production line
- Amazon ASIN identifiers should be provided with the data request to give GreenCircle time to review the products in the scope for possible submittal to the Amazon Climate Pledge Friendly program upon certification, if applicable based on Amazon’s requirements.
- 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

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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 carbon-free and/or renewable energy usage on-site.

GreenCircle will provide an initial data request to be completed by the facility(ies) 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 may conduct a site visit of the manufacturing facility(ies) to verify the details of the manufacturing processes pertinent to the certification audit. GreenCircle may conduct interviews with representatives at the facility(ies) as part of the audit process as well as review any additional data needed to complete the certification. GreenCircle may walk through the facility(ies), conduct a visual inspection, and collect photo documentation to verify the processes and the implemented product improvements,



energy conservation measures and/or renewable energy usage associated with carbon footprint reduction in the manufacturing process.

GreenCircle may determine if the site visit(s) requirements can be met via virtual site visit or a desk audit. GreenCircle will perform a review of the types and quality of data, conservation measures, documentation, and determine whether a site visit is necessary.

To be eligible for a virtual site audit, the client must complete the following for each facility:

- Provide a process flow and facility diagrams, in advance.
- Participate in a virtual site visit review meeting to review the capabilities of the facility to provide visual verification through virtual equipment and to review the process and facility diagrams.

GreenCircle will consider the completeness of documentation provided to support the verification of the carbon footprint reduction with a virtual site visit:

- Implemented product recipe/formulation changes
- Purchase orders or work orders, and pictures of implementation (updated machinery in use) for the conservation measures that are being claimed
- Conservation measures are third party audited by another reputable company.

To be eligible for a desk audit, the client must confirm the only conservation measure being assessed is carbon-free energy. GreenCircle will utilize the desk audit to verify the documentation requirements are met to ensure sole rights and usage of carbon-free energy.

### 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 materials. 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 electricity, renewable energy usage or reduced GHG emission energy sources for both the baseline year and certification period for the entire manufacturing facility(ies). GreenCircle will validate utility data by collecting invoices from utility vendors and 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 for the entire manufacturing facility(ies) benchmarked to total production.

Carbon emissions calculations will align with the guidance of the GHG Protocol and based on the applicable carbon dioxide equivalency factor based on the energy source.

The CO<sub>2</sub> emissions from biomass, per the GHG Protocol, is to be excluded from Scope 1. The GHG Protocol requires the emissions from the other gases created by the combustion of biomass to be reported and included in Scope 1. Therefore, GreenCircle will need to collect the biomass usage of the facility(ies) to determine the CO<sub>2e</sub> from the combustion gases

Some biomass materials may have a fossil fuel component in addition to the biomass component (e.g., municipal waste). The components of waste materials that are of fossil origin should be treated as a fossil fuel and reported as a Scope 1 emission.

Clients from the pulp and paper industry should follow the GHG Protocol calculation tool on calculating GHG emissions from pulp and paper mills for the estimation of the combustion of biomass.

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. If the initiatives to reduce the energy usage at the facility are related to a single production line (i.e., equipment updates), GreenCircle will factor this into the allocation method.

In grouping products together, documentation must be provided as evidence for GreenCircle to verify if products are manufactured in a similar process and the energy draw per manufacturing process is within 10%; and therefore the product weight or unit of product can be utilized. If it is not within 10%, then GreenCircle will need review on the proposed allocation of energy by product family/production line with the manufacturer that is reasonable and representative.

Energy allocation may be determined through review of:

- Sub-metering of energy usage



- Financial data
- Process flow diagram with energy inputs
- Production run times
- Production costs
- Facility area usage by production line

GreenCircle may require footnotes on the CEF label to indicate the boundary of the evaluation. This includes if the reduction is only an attribute of the base product and not accessories, or if the reduction is only attributed to the product's manufacturing process in the direct financial or operational control of the manufacturer, as defined in Section 3.

## 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 Standard Audit Plan.

The facility manufacturing attributes will be assessed for the entire manufacturing processes; not specific to the product undergoing certification.

## 5.5 Certification Audit Deliverables

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 Certificate and Mark for the product's carbon footprint reduction on a CEF label. 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. 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 Reverification Process

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The Certified Environmental Facts Certification is valid for three years, with data verification through an annual check in. It is important for GreenCircle to evaluate any changes within the operations or manufacturing processes to ensure continued compliance with the established criteria. At the conclusion of three years, the certification will expire. Continuous improvement must be demonstrated from the initial certification period to be eligible for recertification of carbon footprint reduction. 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 Agreement with GreenCircle.

## 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 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 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.

**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, CO<sub>2</sub> emissions from biomass fuels are treated differently from fossil fuel combustion emissions per the GHG Protocol.

**Bioliquid:** 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 equivalents 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.

**Mechanical Energy:** Energy used either to drive an alternator for producing electricity or rotating equipment such as motor, compressor, pump or fan for delivering various services.

**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.

GreenCircle will accept product family grouping for products manufactured in an equivalent process. GreenCircle will determine if the energy draw of the production line is within 10%, and the BOMs are similar, then the evaluation of energy usage and carbon emissions reduction can be combined.

**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.

**Thermal energy:** Energy used either for direct process applications or for indirectly producing steam, hot water, hot air for dryer or chilled water for process cooling.

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

***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

***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.

***ISO 14064:2018, 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***





## 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
08/10/2023	Rev. 2	Editorial Updates
04/01/2024	Rev. 3	Updated reference documents

**Certification Officer:** Michelle Boreman