ENTERGY 2023 GHG EMISSIONS INVENTORY

Verification Report

April 2024

103 Magnolia Tree Ct
Cary, NC 27518

Statement of Verification

March 22, 2024

Entergy Corporation
Sustainability and Corporate Strategy
Entergy Services, Inc.
639 Loyola Avenue
New Orleans, LA 70113

Scope

Entergy Corporation ("Responsible Party") engaged Cventure LLC ("Verifier") to review Entergy Corporation's 2023 Corporate Greenhouse Gas (GHG) emissions inventory, and supporting evidence including Entergy's Geenhouse Gas Inventory Management Plan and Reporting Document (IMPRD), detailing the GHG emissions and associated source documents, over the period January 1, 2023 to December 31, 2023 inclusive. These components are collectively referred to as the "GHG Assertion" for the purposes of this statement.

The Responsible Party is responsible for the preparation and presentation of the information within the GHG Assertion. The Verifier's responsibility is to express a conclusion as to whether anything has come to our attention that the GHG Assertion is not presented fairly in accordance with generally accepted GHG accounting standards (e.g., *The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition, WRI/WBCSD, March 2004)*.

Independence

Cventure was not involved in the preparation of Entergy's GHG emissions inventory. It did not participate in any associated GHG emissions data collection, management, and reporting activities, nor the development of associated emissions or usage estimates, and any subsequent assertions made by Entergy. Cventure has not provided any services to Entergy which could compromise Cventure's independence as a third party verifier. Cventure disclaims any liability for any decision made by third parties based on this Verification Statement.

Methodology

We completed our review in accordance with the ISO 14064-3 international standard *Greenhouse Gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*. We planned and performed our work in order to provide a limited level of assurance with respect to the GHG Assertion, with review criteria based on *The Greenhouse Gas Protocol* and quantification methodologies referenced in Entergy's IMPRD.

As part of this 2023 GHG emissions inventory verification program, Cventure verified GHG emissions data reported by Entergy for the following source categories:

- Scope 1 – Direct Emissions Sources:
  - Stationary combustion (power generation and small sources)
  - Mobile source combustion
  - Fugitive emissions
- Scope 2 – Indirect Emissions Sources:
  - Purchased electricity
- Scope 3 – Optional Emissions Sources:
  - Purchased power (controllable and non-controllable purchases)
  - Gas supplier emissions (associated with natural gas delivery to Entergy)
  - Leased assets
  - Gas customer combustion
  - Purchased goods/services and capital goods
  - Employee commuting
  - Business travel

Several immaterial reporting discrepancies were identified during the course of performing this verification project and corrected by Entergy at that time. We reviewed the GHG Assertion, and all of its associated supporting documentation which was received during the course of this verification project, and believe that this work provides a reasonable basis for our conclusion.

Conclusion

Based on our verification review, nothing has come to our attention that causes us to believe that the GHG Assertion is materially misstated. The GHG emissions estimates were calculated in a consistent and transparent manner, and were found to be a fair and accurate representation of Entergy's actual conditions, and were free from material misstatement. Cventure has verified a total of **63,325,670** metric tons of CO_2 equivalent (CO_2e) emissions for calendar year 2023.

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1. Introduction

Entergy Corporation ("Entergy") has prepared a voluntary greenhouse gas ("GHG") inventory for its corporate operations active through the 2023 calendar year. Entergy has engaged Cventure LLC ("Cventure") to provide a third-party verification of the GHG inventory, including Scope 1, Scope 2, and select Scope 3 emissions, the "GHG Assertion", for voluntary GHG reporting purposes for the 2023 calendar year.

The quantification of Entergy's corporate GHG emissions inventory is guided by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) *The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition, March 2004* ("the GHG Protocol"), using an equity share approach to make the GHG inventory's organizational boundaries determination. The 2023 GHG inventory includes the following emissions sources:

Scope 1**:** Stationary combustion in electric generating units and small sources at company facilities; mobile combustion in company fleet vehicles; fugitive methane from natural gas transmission and distribution ("T&D") systems; fugitive sulfur hexafluoride (SF_6) from electric power T&D systems; and fugitive hydrofluorocarbons (HFCs) from building HVAC systems and vehicle air conditioning systems.

Scope 2: Indirect emissions associated with grid purchased power for wholesale generation plants (outside of Entergy's regulated electricity transmission service territory).

Scope 3: Indirect emissions associated with controllable purchased power[1] for resale to end-users; noncontrollable power[2] purchases for resale to end-users; upstream natural gas industry life cycle GHG emissions, associated with their delivery of natural gas fuel to Entergy's electric utility plants and natural gas T&D pipeline systems; Entergy LDC natural gas customer consumption of distributed natural gas; Entergy employee commuting; corporate business travel; leased assets (an Entergy power generation facility leased for sole use of a 3rd party); and purchased goods/services and capital goods associated supply chain GHG emissions.

The GHG emissions associated with all electricity consumed in the operation of Entergy's generation facilities and in Entergy's various administrative and commercial buildings and operations, in the regulated service territory, are accounted for in the Scope 1 direct emissions from stationary combustion. GHG emissions associated with line losses through electric power T&D systems are also captured in the Scope 1 emissions associated with stationary combustion.

[1] Controllable purchased power is defined as power for which the originating source (generating plant) is known, and for which Entergy has made a direct buying decision.

[2] Noncontrollable purchased power is defined as power for which the originating generating plant is not known to Entergy, and Entergy has purchased that power based on a bid made into the MISO regional transmission organization (RTO); and then subsequently sold that power to its electricity transmission and distribution customers/end users.

The GHG emissions associated with the full life cycle of other various fuel sources consumed through Entergy's business operations (e.g., coal and nuclear) are not included in the inventory.

In line with the Entergy's utility generation portfolio, as described on the company's website[3], Harrison County and NISCO (Nelson Industrial Steam Company) GHG emissions are not included in the inventory, as while Entergy personnel operate these two fossil power generation plants, Entergy has no ownership share in either plant.

GHG emissions from stationary combustion (~57%), and controllable and noncontrollable purchased power, in aggregate comprise over 71% of Entergy's total 2023 corporate GHG emissions. Supply chain emissions associated with purchased goods/services and capital goods accounted for over 11% of Entergy's total 2023 corporate-wide GHG emissions. Life cycle GHG emissions associated with the upstream natural gas industry's delivery of natural gas fuel to Entergy's electric utility plants and natural gas T&D companies accounts for an additional ~14% of Entergy's total corporate GHG emissions. Leased assets, the Entergy-owned Louisiana 1 power station leased to a third party for their sole use, contribute approximately 3.3% of Entergy's total 2023 GHG emissions.

Product Combustion, comprising approximately 1.5 percent of Entergy's total 2023 corporate GHG emissions, include emissions associated with the combustion of natural gas distributed to Entergy's residential, commercial, and industrial (medium- to small-size) customers (i.e., a Scope 3 GHG emissions source for Entergy, and a Scope 1 GHG emissions source for their gas distribution customers).

Other Small Sources, comprising less than 0.3% of the inventory, include emissions associated with: mobile combustion, purchased electricity for business operations outside Entergy service territory, fugitive SF_6 (electricity T&D), fugitive CH_4 (natural gas T&D), fugitive HFCs (HVAC systems and vehicles), corporate business travel, and employee commuting.

This document describes the terms and scope of this verification. It serves to communicate the findings of the verification.

2. Verification Execution

The scope of the verification was defined during the verification planning stage and is detailed in the Verification Plan, which is appended to this document. The Verification Plan also describes Cventure's verification process that was executed through the course of the verification. The specific verification procedures that were planned and executed through the verification process

[3] "Entergy Corporation and Subsidiaries 2022 Annual Report"; "Entergy Statistical Report and Investor Guide 2022"; and Entergy 2023 SEC 10-K report.

are described in the appended Plan. The Verification Plan has evolved during the course of the verification exercise; the final version of the Plan is in the Appendix.

The 2023 GHG inventory verification focused on direct emissions associated with fossil fuel consumption at large electric generating facilities using Continuous Emission Monitoring System ("CEMS") data; indirect emissions associated with purchased power; and customer consumption of distributed natural gas. Entergy's 2022 GHG Inventory also includes several small emissions sources, some of which are *de minimus*[4] in nature (small stationary combustion; fugitive emissions of SF_6 associated with electricity T&D; mobile combustion in company fleet vehicles; employee commuting; business travel; fugitive CH_4 associated with natural gas T&D; and HFCs from air conditioning/cooling refrigerant systems). All emissions sources in Entergy's corporate 2023 GHG inventory have been reviewed, with a primary focus on stationary combustion from electric generating units and purchased power, given the risk-based approach used in this verification.

2.1 Site Personnel Interviews

A virtual site meeting was conducted on March 19, 2024 in Louisiana with Entergy's Ninemile Point gas plant's personnel, and was part of our sampling exercise, to obtain data directly from the plant itself, and to better understand GHG information and data management systems. This included a review of the power generation GHG emissions sources at the facilities, through videographic direct evidence provided of the CEMS equipment, CEMS calibration and maintenance logbooks, and the natural gas fuel flow metering systems. A review of metering and data management processes was discussed with plant operations staff, including meter calibration/validation procedures.

This site meeting was an important step in planning and executing the verification. Key Entergy personnel interviewed as part of these meetings included:

- Lesley Lucas, Senior Sustainability Analyst, Sustainability and Environmental Policy
- Environmental Managers/Analysts:
    - Tchernavia Libutti
    - Catherine Cheramie

Other key Entergy staff who provided GHG emissions inventory supporting data and associated documentation included:

- Jeff Turlington and Dan Hintzman, CEMS Information and Small Stationary Combustion Sources, The Woodlands

[4] Entergy describes emissions sources that have been estimated to be less than 1 percent of the total corporate inventory as *de minimus* in its IMPRD.

- Ryan Gay, Gas Settlements, Reporting and Analysis, The Woodlands
- Garrett Branner, Coal Supply and Purchasing/Rail Car Management System (RCMS), The Woodlands
- Grady Kaough, Power Trading Operations, The Woodlands
- Ryan Brasher, Natural Gas Operations, New Orleans
- John Amato, T&D Environmental (SF_6)
- Andrew Dornier, SPO (Natural Gas Deliveries to Entergy)

2.2 Verification Approach

This section outlines the approach used to review key emissions sources in the 2023 GHG inventory.

Stationary Combustion: Fossil Fuel Usage at Generating Facilities

The entire inventory of Entergy fossil generation units was reviewed at a limited depth, and a significant sample of data from select units was reviewed in greater detail. Generation units were selected for detailed reviews based primarily on relative contribution to the 2023 corporate GHG emissions inventory, e.g., using the 1% *de minimus* accounting methodology/reporting threshold of Entergy's GHG inventory, as unit selection screening priority.

The thirty-one (31) generation units listed below were selected for this desktop review, including the following 5 coal and 26 natural gas units (in addition to the two [2] total units from the site meeting contacts at the Ninemile Point gas plant: Units 4 and 5):

Coal

- Independence 1 and 2
- RS Nelson 6
- White Bluff 1 and 2

Gas

- Acadia CT3 and CT4
- Attala AO1 and AO2
- Choctaw CTG 1, 2, and 3
- Hot Spring CT1 and CT2
- Lake Charles 1A and 1B
- Lewis Creek 1 and 2
- Montgomery County CT1 and CT2
- Ninemile 6 Units A and B

- Perryville 1, 2, and 3
- Sabine 1, 3, 4, and 5
- St. Charles 1A and 1B

As part of this detailed verification review of the Entergy CEMS units, a virtual site meeting verification review was conducted with personnel at the Ninemile Point gas-fired plant (Units 4 and 5):

The following information was requested from Entergy and available data reviewed in relation to the above samples:

- Annual data on CO_2 emissions, electricity generation (MWh), and heat input (total MMBtu) for all sixty-two (62) Entergy electric generation units in 2022, from the EPA Clean Air Markets (CAM) Air Monitoring Program Data (AMPD) database;

- Natural gas fuel flow meter CEMS calibration/accuracy checks for Ninemile Point natural gas units audited in detail, with additional documentation provided from the plant environmental analysts for those two (2) respective units;

- Monthly facility-level gas burn data for all Entergy natural gas-fired electric generation facilities (from Entergy's Gas Burn Accounting database, maintained by the Natural Gas Supply and Purchasing Department);

- Daily facility-level coal delivery and coal usage data for all three coal-fired electric generation facilities owned and operated by Entergy (from Entergy's Rail Car Management System database, maintained by the Coal Supply and Purchasing department);

- Hourly CO_2 CEMS data for 2023 obtained directly from the plant's CEMS Data Acquisition and Handling System (DAHS) for select units at the virtual site meeting facility (Ninemile Point Units 4 and 5).

Organizational boundaries were verified using information contained in Entergy's 2022 Statistical Report and Investor Guide, and Entergy's 2023 SEC 10-K Report. As described in Entergy's GHG Inventory Management Planning and Reporting Document, March 2024 (IMPRD), Entergy GHG emissions inventory boundaries are determined on an equity share basis (i.e., the percent equity share of those facilities owned by Entergy) which was used to calculate the GHG emissions

in the inventory database for this category. These equity share values in the GHG inventory were cross-checked against the data provided in Entergy's IMPRD, statistical report, and annual report.

CEMS data supplied by Entergy were checked against both the GHG emissions data in their GHG inventory spreadsheets, and the EPA Clean Air Markets' air monitoring program data (AMPD) database, for the thirty-one (31) selected units above. Monthly and annual CO_2 CEMS reports were generated by the Verifier from queries of the AMPD database; and were checked and confirmed against the data for those sampled units as reported in Entergy's GHG emissions inventory spreadsheets. Annual total CO_2 report queries of the EPA AMPD database were made for all sixty-two (62) Entergy acid rain-regulated units; and cross-checked against the Entergy GHG inventory data. (Note: The 2020-start up New Orleans Power Station is not subject to EPA acid rain regulations; as such, its CO_2e emissions are not in the EPA AMPD database.)

For each of the units sampled, various error checking tests were performed on the Entergy GHG inventory spreadsheets, and the sampled data to assess the information collected, including some examples such as record counts/missing data, re-computation, and other cross-checks. For each of the selected units, aggregation calculation checks, and source type and equity share checks, were compared against database outputs/reports and the Entergy GHG inventory spreadsheets.

Through the course of the verification program, the data management systems and controls employed in the quantification of emissions were reviewed, as detailed in the Sampling Plan procedures, included in Section 7 of the final Verification Plan. These systems were found to be effective in the calculation of the GHG Assertion.

Purchased Power (Controllable)

Controllable power purchases are those which are based on "specific life of unit" power purchase agreements, with a known power generation source. The key emissions factors, sources, and calculations that Entergy used to quantify the emissions associated with its controllable power purchases in the 2023 GHG inventory were checked. This source comprised approximately 4.3% of the total Entergy 2023 GHG Assertion.

Raw data outlining purchased power by Entergy operating company and counterparty/long-term contract for 2023 was provided by the Power Trading group and cross-checked against the TRADES database containing controllable purchased power for 2023, as well as the Entergy GHG inventory spreadsheets. They were checked for correct application of plant-specific emissions factors from EPA's eGRID database (January 2024 release for year-2022 data).

Purchased Power (Non-Controllable)

Non-Controllable power purchases are defined by Entergy as those electricity market purchases made wherein the exact source of the power (i.e., from a specific, non-Entergy power generation plant) being sold is unknown to the customer (i.e., in this case, Entergy).

The amount of non-controllable power purchased by Entergy in 2023 is based on data contained in Entergy's 2022 SEC 10-K report, in which both the total non-controllable purchases (i.e., those general MISO market purchases made by Entergy, based on their respective bids for power in the MISO electricity market), as well as the controllable/non-MISO purchases made by Entergy. The key emissions factors, sources, and calculations that Entergy used to quantify the emissions associated with its non-controllable power purchases in the 2022 GHG inventory were checked. This source type comprised approximately 9.4% of the total Entergy 2023 GHG Assertion.

Other Emissions Sources

Several Scope 3 optional GHG emissions sources were reported by Entergy as part of this 2023 GHG Assertion. These included purchased goods/services, capital goods, and leased assets. Those respective supply chain GHG emissions comprised approximately 11.0% of the total Entergy 2023 GHG Assertion; while leased assets comprised approximately 3.3% of the total GHG emissions inventory.

Another significant Scope 3 GHG emissions source category in Entergy's 2023 GHG inventory is upstream suppliers' GHG emissions, associated with their delivery of natural gas fuel to Entergy's electric utility power plants, and to their natural gas transmission and distribution pipeline systems. This source category comprised ~13.7% of the total Entergy 2023 GHG Assertion

Entergy also has a number of small sources that collectively comprise approximately 2.0% of the total GHG Assertion. Some of these sources include emissions associated with small stationary combustion sources (0.1%); mobile combustion (corporate fleet; 0.1%); fugitive CH_4 (natural gas T&D; 0.1%); fugitive SF_6 (electricity T&D; <0.1%); fugitive HFCs (HVAC and vehicle; <0.1%); purchased electricity for business operations outside Entergy service territory (<0.1%); customer consumption of distributed natural gas (1.5%); business travel (<0.1%); and employee commuting (<0.1%). Most of those emissions sources are categorized in the *de minimus* category, as defined in the Entergy IMPRD (i.e., sources representing <1% of the total GHG Assertion).

3. Data Management and Control System Review

A critical element of the verification process was for the Verification Team to gain a thorough understanding of the data management systems and controls employed by Entergy. This understanding necessitated a review of:

- The parties involved and their respective responsibilities;
- The data collection and automated data measurement and management systems;
- Post-collection data manipulation;

- Quality assurance procedures employed to detect erroneous or missing data; and
- Changes to data management system over time/opportunities for improvement.

Testing Internal Controls

The Verification Team developed a sufficient understanding of the GHG information system and internal controls to determine whether the overall data management system is sound, examining it for sources of potential errors, omissions, and misrepresentations. This assessment incorporated examining three aspects of the company's internal controls: (1) the control environment, (2) the data systems, and (3) the control and maintenance procedures. The testing procedures documented in the Verification Plan include some procedures to test the effectiveness of the internal controls in place. The results of these tests influence the depth of activity data sampling.

Conducting Substantive Testing

Substantive testing procedures were used to assess the reasonability and validity of the GHG Assertion where further testing was required to assess internal controls based on the observations and preliminary findings of the Verification Team. The specific procedures are summarized in Section 7 of the final Verification Plan as separate tables for each process or activity involved in the quantification and reporting of the GHG Assertion. The Verification Team developed a thorough knowledge of the data management and control systems utilized in the organization through the review of the IMPRD and interviews with key personnel. The following were the key data systems reviewed:

- CEMS data – for large fossil generating stations.
- Gas purchases data – monthly for all gas-fired electric generating plants.
- Coal purchases and burn data.
- TRADES – controllable power purchases tracking system: hourly/daily purchase amounts from 1/1/2023 to 12/31/2023 inclusive.

4. Verification Results

4.1 Discrepancies

The table below details the discrepancies found during the verification process, a discrepancy title (brief description), and final status in the GHG Assertion after discrepancy resolution implemented by the Responsible Party.

Procedure	Discrepancy Title	Final Status in Assertion
B1: Organization Boundaries, Infrastructure and Activities	N/A	No discrepancies detected
B2: Review of Operating Conditions	N/A	No discrepancies detected
C1: True-Up and Re-Performance Calculations	N/A	No discrepancies detected
C2: Minor/*De Minimus* Emissions - Methodology and Documentation	N/A	No discrepancies detected
D1: Data Collection and Quality Controls	N/A	No discrepancies detected
D2: Data Confirmation against External Sources	N/A	No discrepancies detected
D3: Data Migration into Inventory	N/A	No discrepancies detected
A1: Final Verification Assessment	N/A	No discrepancies detected

4.2 Aggregate Materiality

No discrepancies were identified during the course of this GHG emissions inventory verification program, and thus did not result in a breach of materiality (i.e., being greater than 10% of the total GHG Assertion). This is in line with the uncertainty assessment of Entergy's inventory.

4.3 Other Findings

- For the thirty-two (32) units identified as targets for more detailed verification review, air monitoring program data (AMPD), monthly/annual CO_2 CEMS data from US EPA's Clean Air Markets database system were reviewed. These results were verified against the direct emissions reported in Entergy's GHG emissions inventory spreadsheets. No material discrepancies associated with Entergy's GHG emissions inventory accounting and reporting were identified as part of this EPA CO_2 emissions database and Entergy GHG emissions inventory spreadsheets cross checks.

- Emission factors for CH_4 and N_2O emissions from each of the Entergy fossil generation units were also checked, revealing no discrepancies or omissions.

- Organizational and operational boundary, and equity share, verification checks revealed no discrepancies or omissions.

- For the three (3) Entergy-operated coal-fired electric generation plants, comparisons were made by cross-checking the daily total plant coal burn analytical data on total coal fuel heat input MMBtu, as provided by Entergy's Rail Car Management System's (RCMS) plant-level data, against the daily plant total fuel heat input from the EPA AMPD database. RCMS data are based on coal feed rate process monitoring data from the coal feeders (coal fed from the boiler's coal hoppers to the pulverizers), and coal analytical data generated by chemical analyses of daily coal samples taken by Entergy plant personnel. The EPA data on MMBtu fuel heat input are based on in-stack CEMS measurements on flue gas flow rates, and flue gas constituent concentrations (CO_2 or O_2). The results of these different measurement methodologies' cross-checking comparisons between the 2023 dataset of daily burn data showed White Bluff having an average deviation of -5.8%, between the RCMS and EPA AMPD plant heat input daily data for 2023, +2.0% for the Independence plant, and -11.3% for Nelson 6. Because the Nelson 6 coal usage was so low as compared to that of the two larger Entergy coal plants, the overall collective difference was a net -3.1% difference between the RCMS daily coal burn data, and the EPA AMPD data on plant heat input. The results of these various cross-checks provide an additional degree of confidence in the reliability of Entergy's coal-fired generation GHG emissions inventory reporting. This is especially true when considering the overall measurement accuracy challenges, and other operational & maintenance characteristics, of the coal feed rate measurement process; as well as completely different measurement methodologies utilized by the CEM system to generate the data used in this verification cross-check.

- There were eleven (11) natural gas-fired facilities with generation units audit-sampled under this verification program with monthly and annual natural gas fuel use/total heat input data obtained from the Entergy Gas Burn Accounting database. This Entergy gas burn database tracks gas utility purchases and pipeline deliveries to Entergy's electric generating stations, based on the gas utility's invoice/billing data, with the associated gas volume of the amounts delivered being determined by the gas utility pipeline's natural gas flow meter (i.e., a financial meter, operated and maintained by the natural gas utility, outside the Entergy plants' fence lines). These monthly natural gas delivery/burn data from Entergy's gas burn database were then compared to the EPA AMPD database results. The results of these cross-check comparisons showed the facility-wide deviations between the two datasets had an overall average of +1.9% difference for the eleven (11) total facilities. This small deviation is consistent with the accuracy of the respective natural gas

financial billing meters, and that of the fuel flow meters for each of the Entergy power generation units, and the overall accuracy and precision of those natural gas fuel flow metering technologies.

- Units with available CEMS hourly CO_2 data from the two (2) Entergy virtual site meetings' data acquisition and handling systems (DAHS; at Ninemile Point Units 4 and 5), provided data from the respective plant's on-site DAHS computer database archive systems. These hourly, "raw" data sets (i.e., those not yet having gone through initial, plant-external quality control (QC) checks by Entergy Fossil Environmental, and subsequently validated/revised/approved by EPA), were compared to the final EPA-approved AMPD database 2023 annual data. The two (2) respective units collectively agreed on average to within ~0.1% of the final EPA AMPD database data. Such low QA/QC adjustments of raw data throughout the 2023 reporting year is a further indicator of the overall reliability of Entergy's reported CEMS data.

Through the course of this verification program, the data management systems and controls employed in the quantification of emissions for Entergy were reviewed, as detailed in the Verification Plan procedures. These systems were found to be effective in the calculation of the GHG Assertion.

APPENDIX

Verification Plan

2023 GHG Emissions Inventory Verification Plan

Entergy Corporation

1 Introduction

This document provides details on the verification scope and process implemented to produce a limited level verification of the 2023 organization-wide GHG inventory ("GHG Assertion") for Entergy Corporation ("Entergy"). The GHG Assertion made by Entergy requires the quantification of the GHG emissions produced during calendar year 2023, and is related primarily to stationary combustion of fossil fuels, and from purchased power, as well as from a number of minor sources. An overview of operations will be provided in the Verification Report.

A Verification Risk Assessment was conducted during the verification planning stage; the results of which will be provided in Section 6 of this document. Additionally, the results of the Risk Assessment informed the development of the Sampling Plan (see Section 7).

The verification conclusion will be delineated in the Verification Statement, and the verification findings will be described further in the Verification Report.

2 Verification Scope

3 Objective

The primary objective of this verification engagement is to provide assurance to Entergy, and any external users of Entergy's public GHG reporting, that the GHG Assertion is reliable, and of sufficient quality for:

- Internal purposes, namely tracking towards internal reduction targets, as well as the preparation of annual reports, corporate social responsibility (CSR) reports, and other disclosures; and
- Other external voluntary reporting, primarily to the Carbon Disclosure Project (CDP), the Edison Electric Institute (EEI), and the American Carbon Registry (ACR).

4 Parties and Users

The person or persons responsible for the provision of the GHG Assertion and the supporting information, as defined in Section 2.23 of ISO 14064-1:2006, is the "**Responsible Party**". For this verification, Entergy is the Responsible Party. Cventure LLC ("Cventure") has been engaged by Entergy to provide a third-party verification of the GHG Assertion. The "Intended User" is defined in Section 2.24 of ISO 14064-1:2006 as the individual or organization identified by those reporting GHG-related information that relies on that information to make decisions. Entergy (and the public at large) are the intended users of the information contained within the Verification Statement.

5 Scope

The verification will be conducted in accordance with *ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions.* The verification is designed to provide a limited

level of assurance. The Verification and Sampling Plan is developed based on the relevant criteria described in:

- The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard (WRI/WBCSD Revised Edition, 2004)

The following table defines the scope elements specified for the organization.

Scope Element	ISO 14064-1 Definition
Boundary	The organization's corporate-wide boundary, including legal, financial, operational and geographic boundaries
Infrastructure and Activities	The physical infrastructure, activities, technologies and processes of the organization
GHG Sources	GHG sources to be included
GHG Types	Types of GHGs to be included
Reporting Period	Time period to be covered

Descriptions of each of the scope elements application to Entergy's GHG Assertion are presented below.

Boundaries

During the initial verification planning, organizational boundaries and the sources required to be included in the emissions inventory quantification are reviewed. The procedures to review the GHG Assertion were designed to support a limited level of assurance. These procedures systematically review:

- the emissions sources included in the quantification procedures;
- the methodologies employed in the quantification procedures;
- data handling, information and management system and associated controls, and quality assurance/quality control activities;
- any changes in the quantification methodology, or to organizational boundaries due to acquisitions or divestitures, as compared to previous corporate GHG emissions reports; and
- the GHG Assertion.

Entergy has chosen to include all company-owned assets and those under a capital lease consistent with *"equity share"* reporting under EPA and WRI/WBCSD GHG reporting protocols.

Infrastructure and Activities

According to Entergy's website[5], "Entergy is a Fortune 500 company that powers life for 3 million utility customers through our operating companies in Arkansas, Louisiana, Mississippi, and Texas. We are investing in the reliability and resilience of the energy system while helping our region transition to cleaner, more efficient energy solutions. With roots in our communities for more than 100 years, Entergy is a nationally recognized leader in sustainability and corporate citizenship. Since 2018, we have delivered more than $100 million in economic benefits each year to local communities through philanthropy, volunteerism, and advocacy. Entergy is headquartered in New Orleans, Louisiana, and has approximately 12,000 employees."

GHG Sources

The following key sources comprise the 2023 GHG inventory categorized by Entergy as follows:

Entergy Category	**Emissions Source Category**	**Corporate Emissions Source**	**GHGs Included**
Direct Emissions	Stationary Combustion	Power Generating Units	CO_2, CH_4, N_2O
		Small Stationary Combustion Sources and Generators	CO_2, CH_4, N_2O
	Mobile Combustion	Corporate Fleet	CO_2, CH_4, N_2O
	Fugitive Emissions	Natural Gas Transmission and Distribution	CH_4
		Electricity Transmission and Distribution	SF_6
		Cooling/Air-Conditioning (buildings, mobile and nuclear cooling equipment)	HFCs
Scope 2 Indirect Emissions	Purchased Electricity	Power Purchased for Business Operations Outside Entergy Service Territory	CO_2, CH_4, N_2O
	T&D Losses and Company Usage	Entergy Generated and Purchased Power Consumed on Entergy T&D System, and Company Locations Energy Consumption	CO_2, CH_4, N_2O
Scope 3 Optional Emissions Sources	Controllable Purchased Power	Controllable Purchased Power (Contracted Power Where the Source is Known) Sold to Customers	CO_2, CH_4, N_2O

[5] Accessed on February 19, 2024 at http://www.entergy.com/about_us/

	Purchased Power (Non-Controllable)	Market Purchases With Exact Source Being Unknown Sold to Entergy Customers	CO_2, CH_4, N_2O
	Gas Customer Combustion	Product Combustion by LDC Customers	CO_2, CH_4, N_2O
	Delivered Gas	Gas Supplier Emissions – Gas Delivery to Entergy Power Plants	CO_2, CH_4, N_2O
	Business Travel	Travel by Air, Rental Car, Hotel Stays, and Personal Vehicles	CO_2, CH_4, N_2O
	Employee Commuting	Travel by Employees To and From Normal Work Locations	CO_2, CH_4, N_2O
	Purchased Goods and Services & Capital Goods	Supply Chain Emissions (Spend-Based Approach)	CO_2, CH_4, N_2O, and Other GHGs
	Leased Assets	Entergy Facility Leased for Sole Use of Third Party: e.g., Exxon Louisiana 1	CO_2, CH_4, N_2O

GHG Types

The emissions portion of the assertion accounts for the following greenhouse gases:

- Carbon Dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Sulfur Hexafluoride (SF_6)

Perfluorocarbons and nitrogen trifluoride are not included in Entergy's inventory given the nature of its business, and that these classes of chemicals are not used in any of Entergy's operations in any sizeable amount.

The final inventory is expressed in both short tons of CO_2 equivalent emissions ("CO_2e"), as well as in metric tonnes CO_2e.

Reporting Period

The GHG Assertion covers the 2023 calendar year, from 1 January 2023 through 31 December 2023, inclusive.

6 Materiality

During the course of the verification, individual errors, omissions, or misrepresentations (collectively referred to as discrepancies), or the aggregate of these potential discrepancies, will be evaluated both qualitatively and

quantitatively. Materiality defines the level at which discrepancies in the GHG Assertion or any underlying supporting information precludes the issuance of a limited level of assurance.

The Verification Team is responsible for applying professional judgment to determine if discrepancies could adversely affect the GHG Assertion, and subsequently influence the decisions of the Intended User, in which case, the discrepancies are deemed to be material. Quantitative discrepancies will be calculated individually to determine the impact of the discrepancy as a percentage of the GHG Assertion.

All discrepancies that are outstanding at the conclusion of the verification will be documented in the Verification Report and classified on an individual basis as either material or immaterial.

Materiality Threshold

In the framework of a corporate entity-wide GHG inventory, the concept of materiality is defined in the context of the overall uncertainty in the reported data. A quantity, in this case errors and/or uncertainties associated with reported results, is typically considered to be "material" if it would influence any decision or action taken by users of the information. This definition of materiality is consistent with verification guidelines and goals for the reliability of reported data.

Materiality is not the same as a *de minimus* emissions threshold, for either the exclusion of specific sources from the inventory, or the use of estimated values without ongoing, annual collection of associated activity data. While a *de minimus* exclusion from the inventory could contribute to overall uncertainty, completeness is only one component contributing to overall uncertainty.

A materiality threshold for this limited level of assurance verification was set at 10% for the corporate GHG inventory. Individual discrepancies and the aggregate of individual discrepancies will be analyzed to determine if the materiality threshold has been breached.

Entergy's current GHG Inventory Management Plan and Reporting Document (IMPRD) states that *"...emissions estimated to be less than 1% of the total inventory are considered de minimus unless they are anticipated to change dramatically and grow above this threshold*." The *de minimus* label for emissions sources <1% of the total inventory was selected by Entergy to delineate a threshold for inventory quantification. Sources which fall within the *de minimus* category can continue to use the original emissions estimate for up to five years before having to re-calculate the emissions. Note that *de minimus* sources, as defined by Entergy, are included in the total inventory quantification; they are just not re-calculated every year.

6.1 Principles

ISO 14064 defines five principles that should be upheld in the development of the GHG Assertion. These principles are intended to ensure a fair representation and a credible and balanced account of GHG-related information. The verification procedures developed and executed during the course of this verification will present evidence such that each of these principles is satisfied.

Relevance

Appropriate data sources are used to quantify, monitor, or estimate GHG sources. Appropriate minimum thresholds associated with emissions levels, i.e., from *de minimus* sources, are used to justify the exclusion or the aggregation of minor GHG sources or the number and/or frequency of data points monitored.

Completeness

All sources within Entergy's GHG inventory boundary are included within an identified source category.

Consistency

Emissions calculations for each source are calculated uniformly, from year-to-year by Entergy. If more accurate procedures and methodologies become available, documentation will be provided to justify the changes and show that all other principles are upheld.

Accuracy

Measurements and estimates are presented, without bias as far as is practical. Where sufficient accuracy is not possible or practical, measurements and estimates should be used while maintaining the principle of conservativeness.

Transparency

Information is presented in an open, clear, factual, neutral, and coherent matter that facilitates independent review. All assumptions are stated clearly and explicitly, and all calculation methodologies and background material are clearly referenced.

6.2 Limitation of Liability

Due to the complex nature of the operations within the organization and the inherent limitations of the verification procedures employed, it is possible that fraud, error, or non-compliance with laws, regulations, and relevant criteria may occur and not be detected.

7 Verification Team

Kevin Johnson has over 35 years energy and environmental consulting experience, focusing over the last half of his career on verification, greenhouse gas and CO_2 emissions inventories, and sustainability programs. In 2005, he founded Carbon Solutions, Inc., an independent consulting services firm, and in 2007 with Wiley Barbour he co-founded Cventure LLC. While a contractor for ERT-Winrock in 2008-9, he served as project manager for several corporate GHG inventory verification projects, and drafted the verification guidelines for the American Carbon Registry. Along with Mr. Barbour he was also a primary author of the ERT Corporate GHG Verification Guidelines. Mr. Johnson has performed several hundred verification projects over the last fifteen plus years. At Cventure, he has also performed CDP reporting benchmarking, and ISO 14064 and GRI sustainability reporting gap analyses, for several commercial clients. Prior to forming Carbon Solutions, Inc., he previously served as the leader of URS Corporation's corporate GHG/climate change practice. Some of his other project management experience includes corporate strategy development, offset project assessments and feasibility studies, GHG emission inventories, protocols, and verification, environmental management information system implementations, and carbon offsets verification and trading support. Some climate change clients include Entergy, Exelon, Eni, El Paso Energy, Bloomberg LP, News Corp, Fox Corporation, T. Rowe Price, Kimco Realty, Healthpeak, FedEx, BlueSource, Albertsons, Lazard, US Energy Biogas, U.S. DOE, GRI, and several oil producers. While at Radian Corporation during the first half of his career, he had significant field experience with continuous emissions monitoring systems (CEMS). These field testing projects included serving as project manager for on-site field testing task leader on CEMS testing projects at four electric power generation plants, numerous industrial steam plant boilers, and a cement kiln; two of those field testing projects also included CEMS certification relative accuracy test audit (RATA) testing.

Wiley Barbour has over 30 years of experience providing technical and policy support to corporations on issues related to climate policy, greenhouse gas (GHG) emissions, corporate climate change strategy, carbon markets,

and sustainability programs. Prior to co-founding Cventure LLC, Mr. Barbour worked as the Executive Director of Environmental Resources Trust (ERT), providing GHG emissions inventory development, carbon market expertise, and verification services to dozens of corporate clients including Wal-Mart, Nike, and Google. During his time at ERT he managed the GHG Registry, the world's first registry for carbon offset projects, as well as the development/launch of the American Carbon Registry for Winrock. Also while at ERT, Mr. Barbour provided program management and sustainability program consulting services to several corporate clients, including Entergy, Nike, NYMEX, AIG, the World Bank, Environmental Defense Fund, the US EPA, and the US DOE. Previously Mr. Barbour served in the U.S. EPA's Policy Office, managing the U.S. GHG Emissions Inventory Program, and serving as the U.S. representative to the Intergovernmental Panel on Climate Change (IPCC) GHG Emission Inventory Task Force.

8 Verification Process

The approach for conducting this verification of Entergy's 2023 GHG Assertion generally followed the activities outlined in the following table. Although these activities are generally completed sequentially, the order may be modified according to circumstances such as scheduling and data availability.

Pre-Engagement	Approach	Execution of Verification	Completion
1. Selection of Lead Verifier **2.** Pre-Engagement Planning **3.** Contract Execution	**4.** Selection of Verification Team **5.** Communication with Client/ Responsible Party **6.** Kick-off Meeting **7.** Draft Verification and Sampling Plan **8.** Verification Risk Assessment	**9.** Site Visit(s) **10.** Conduct Verification Procedures **11.** Issue Clarification & Data Request **12.** Revise & Finalize Verification and Sampling Plan (if/as needed) **13.** Evaluate & Address Outstanding Issues	**14.** Evaluate Evidence **15.** Draft Verification Report & Statement **16.** Issue Verification Report & Statement

9 Pre-Engagement

Prior to submitting a proposed statement of work to conduct this verification, the pre-engagement planning activities included reviews of previous business engagements/verifications with the Responsible Party, to determine if any previously unresolved conflicts could prevent Cventure from engaging in the verification. Also, the potential for actual or perceived conflicts of interest was reviewed from the perspectives of advocacy, financial interest, familiarity, self-review, and incentives. No threats of conflicts were identified during that review. Following the acceptance of the proposed statement of work and signing of a contract for services, the Verification Team was selected, comprised of the individuals as identified in Section 3.

10 Approach

An extensive knowledge of the Responsible Party's business, relevant industry, and details of the Corporation itself are required to conduct a thorough verification that can lead to a conclusion. The initial information collected about the Responsible Party and its facilities forms the basis of the draft Verification Plan. The development of the final Verification Plan is an iterative process through the course of the verification project, with the resulting plan being updated as new information becomes available, as applicable. There are three types of risk associated with the GHG Assertion, as defined in ISO 14064-3:

- Inherent Risk
- Control Risk
- Detection Risk

The process of designing the Verification Plan involved the development of Verification Risk Assessment for the Responsible Party. The steps in this process included:

- Reviewing the GHG Assertion, and the methodologies employed by the Responsible Party;
- Assessing the likelihood that a material misstatement might exist in the GHG Assertion, if no controls were used to prevent misstatements in the GHG Assertion (i.e., inherent risk);
- Assessing the control environment and corporate governance process (i.e., control risk);
- Should such material misstatements exist, assessing the risk that the verification evidence collected and reviewed will fail to detect them (i.e., detection risk); and
- Reviewing each emissions source identified by the Responsible Party, and evaluating their contribution to the GHG Assertion and the associated potential material discrepancy for each.

The results of the Verification Risk Assessment informed the development of the verification procedures, which are documented in Section 7 of the Verification Plan, and a summary of the Verification Risk Assessment is provided in Section 6 of the Verification Plan. The draft Verification Plan was provided to the Responsible Party for review and comment before proceeding with the verification.

11 Execution of Verification

With draft Verification and Sampling Plans in place, the verification procedures are then executed. This process involves collecting evidence, testing internal controls, and conducting substantive testing. Over the course of the verification, the final Verification and Sampling Plan provided in the Verification Report will reflect the verification parameters and procedures that were actually implemented.

Virtual Site Meetings/Tours

Due to restrictions due to the coronavirus pandemic, a virtual site meeting will be conducted via videoconference communications. With ISO verification activities "typically" focusing on gathering three types of evidence, one of which being physical evidence that can be "seen or touched", such as fuel meters and emission monitors; and physical evidence is gathered by "direct observation of equipment". Based on that, along with the collection and review of the other two types of evidence, including extensive documentary and testimonial evidence, Cventure has determined that such virtual site meetings/plant tours are adequate in demonstrating that Entergy's GHG emissions monitoring systems are in the practice of collecting relevant and reliable data.

The virtual site meeting was conducted by Cventure and Entergy on March 19, 2024 at the Ninemile Point facility in Louisiana, and is a key element of the verification. During the course of that virtual site meeting,

Cventure interviewed key plant personnel regarding the operations and data management of that large natural gas-fired generation facility, both to cross-check GHG data, as well as gain a deeper understanding of the GHG information systems and controls at the plant level.

Key Entergy personnel interviewed as part of the virtual site meetings included Environmental Managers/Analysts at Ninemile Point:

- Tchernavia Libutti
- Catherine Cheramie

Other key Entergy staff data providers of primary GHG emissions inventory development related data and associated supporting documentation included:

- Justin Overstreet, CEMS Emissions Data Reporting (*"2023 Q4 CO2 Emissions & Rates – For Strat & Policy")*, The Woodlands
- Grady Kaough, Power Trading Operations, The Woodlands
- Ryan Gay, Gas Settlements, Reporting and Analysis, The Woodlands
- Jeff Turlington and Dan Hintzman, CEMS QA/QC Data and Small Combustion Sources, The Woodlands
- Garrett Branner, Coal Supply and Purchasing/Rail Car Management System (RCMS), The Woodlands
- Ryan Brasher, Natural Gas Operations, New Orleans
- John Amato, T&D Environmental (SF_6)
- Andrew Dornier, SPO (Natural Gas Deliveries to Entergy)

Collecting Evidence and Review of Documentation

Sufficiency and appropriateness are two interrelated concepts that are fundamental to the collection of verification evidence. The decision as to whether an adequate quantity (sufficiency) of evidence has been obtained is influenced by its quality (appropriateness).

Through the execution of the verification procedures as described in Section 7, the Verification Team reviewed three key forms of evidence including physical, documentary, and testimonial:

- Management documentation: procedures related to the collection, storage, and management of the data supporting the GHG Assertion;
- Records: records comprise time-sensitive data, correspondence, and files;
- Interviews: the interviews provided information regarding operations and data management and will provide evidence to support the sufficiency of data controls; and
- Computer systems: data systems used to capture/manage GHG-related data and calculate the GHG Assertion, were also assessed by the Verification Team as part of this review.

The following are the key data systems which were reviewed:

- TRADES database – controllable power purchases tracking system: hourly purchase amounts from 1/1/2023 to 12/31/2023 inclusive were extracted by Grady Kaough.

- CEMS data – for fossil generating stations from Justin Overstreet
- Gas purchases data – monthly for all gas-fired electric generating stations – from Ryan Gay: amounts inputted into Accounting.
- Coal purchases/burn data – from Garrett Branner (solid fuels): amounts inputted into Accounting.

Testing and Assessment of Internal Controls

The Verification Team developed a sufficient understanding of the GHG information system and internal controls to determine whether the overall data management system is sound and if it supports the GHG Assertion. This assessment sought to identify any weakness or gaps in the controls that pose a significant risk of not preventing or correcting problems with the quality of the data and examining it for sources of potential errors, omissions, and misrepresentations. It incorporated an examination of three aspects of the Responsible Party's internal controls: (1) the control environment, (2) the data systems, and (3) the control and management procedures.

Assessment of Data

Substantive testing procedures were used to assess the reasonability and validity of the GHG Assertion. Both quantitative and qualitative analysis were performed to achieve the desired level of assurance. The verification procedures are described in Section 7, as separate tables for each process or activity involved in the quantification and reporting of the GHG Assertion. The verification procedures included activities designed to:

- Review the Responsible Party's GHG inventory boundary, including a review of the completeness of emissions sources identified;
- Review the Responsible Party's data sources to ensure the GHG Assertion is calculated based on metered or estimated data;
- Re-calculate the GHG Assertion, which demonstrates transparency and accuracy; and
- Review the GHG Assertion to ensure the emissions calculated by the Responsible Party have been accurately reported.

12 Completion

This engagement was closed after the verification had been executed and the Verification Report was finalized.

Preparing the Verification Report

The purpose of the Verification Report is to document the verification findings. The Verification Statement, which presents Cventure's verification conclusion, was included in the Verification Report.

Closing the Engagement

The verification engagement was closed out upon delivery of the final Verification Report.

13 Verification Schedule

The following schedule was implemented for the verification project.

Description	Date
Draft Verification Plan to Responsible Party	February 21, 2024
Data/Documentation Requests Sent: Site Meeting	February 22
Data/Documentation Requests Sent: Subject Matter Experts	February 23
Cventure Receives Prelim Draft GHG Inventory from Entergy	March 5
Preliminary Verification Review Checks Completed	March 18
Virtual Site Meeting	March 19
Detailed Reviews/Root Documentation Checks Complete	March 20
Draft Verification Statement to Entergy	March 20
Final Verification Statement to Entergy	March 22
Final Verification Report to Entergy	April 22

14 Verification Risk Assessment

There are three types of risk associated with the GHG data management system and the GHG Assertion defined in ISO 14064-3:

- Inherent Risk
- Control Risk
- Detection Risk

The assessed level of risk for this verification dictated the degree of rigor planned for the verification procedures described in the accompanying Sampling Plan. Our established verification procedures ensure a thorough treatment of any risk identified, including determination of magnitude and sensitivity of that risk, during the assessment process. A qualitative risk assessment was completed based on observations made by reviewing and assessing accompanying documentation, as well as reviewing some other supporting documents.

The *inherent* risk in Entergy's corporate-wide 2023 GHG Assertion emanates from the large and complex nature of the company, the number of parties involved in managing their emissions inventory and developing their assertion, the number of emission sources, a large number of natural gas, oil and coal plants used in the process, and a smaller amount of controllable power purchases occurring throughout the year.

For the large CEMS-equipped, fossil generation units, because there are so many of them in Entergy's system (~51 units with significant operations in 2023, i.e., each contributing >0.3% of fossil generation direct CO_2 emissions in 2023, with that entire group collectively contributing over 99% of Entergy's power generation combustion direct GHG emissions), there would have to be multiple, long duration control failures to create errors which could lead to a material misstatement of Entergy's entity-wide, corporate GHG inventory. (Note: For example, in the 2010 case of two, highly unusual CEM system failures, which each went undetected for several months: while they affected 2010 annual GHG emissions of each unit by 5-10%, their collective total impact on Entergy's overall 2010 corporate GHG inventory was still less than 1%, far below the material threshold for a limited level of assurance GHG inventory verification program.)

Due to these reasons, in particular the sheer magnitude of Entergy's overall GHG emissions footprint, and the rigorous EPA regulatory compliance requirements for utility boiler CEMS and associated reporting systems, the *inherent risk* to Entergy's 2023 GHG emissions inventory has been assessed to be low.

Control risk relates to the likelihood that a material misstatement in the 2023 GHG Assertion will not be prevented or detected by Entergy's internal control and data management systems. Control risks are assessed primarily by reviewing data controls and management systems for large fossil generating units, controllable purchased power, and noncontrollable purchased power (comprised in aggregate over 70% of total company-wide GHG emissions in 2023).

The largest control risk in relation to the 2023 GHG Assertion is likely to be the manual transcription method in which the inventory is prepared (i.e., emissions values are extracted from various sources and manually entered into an Excel workbook). This is true for all emissions sources, including the largest ones: namely, stationary combustion, controllable purchased power, noncontrollable purchased power, and upstream Entergy natural gas suppliers' GHG emissions (associated with gas delivered to Entergy electric utility plants and natural gas T&D pipelines). For purchased power, a number of data systems (such as TRADES) feed into Entergy's accounting system.

The individual data systems which collect and transfer data, input into Accounting, undergo QA/QC checks numerous times, both on a monthly and on an annualized basis. For all of the large, CEMS-equipped fossil fuel electric generation units, there are very rigorous measurement, monitoring, and reporting (MMR) requirements established by the U.S. EPA. These CEMS MMR programs, and their robust associated QA/QC activities, serve as the basis for demonstrating regulatory compliance with various federal Clean Air Act and state air permit compliance requirements. Also, the equipment utilized in these CEM systems are established technologies with demonstrated, long track records of accuracy, precision, and reliability. In light of the abovementioned reasons, the control risk was assessed to be low.

The *detection risk* is a measure of the risk that the verification evidence collected and reviewed will fail to detect material misstatements, should such misstatements exist. Unlike *inherent* and *control risks*, which are typically attributes of the facility types and technologies employed therein, *detection risk* is variable but can be maintained at a low level by designing an appropriate number of verification tests, and collecting adequate sample sizes to support those tests. Cventure conducted a number of sampling tests, focused on large fossil electric generation units and purchased power. These tests are outlined in the Sampling Plan in Section 7.

Overall, the Verification Team's procedures have been designed to minimize *detection risk*. Our initial assessment is that *detection risk* was low (in line with previous years' verification exercises), given the large number and appropriateness of the verification sampling/checking tests which are focused on the largest GHG inventory segments, i.e., CEMS units and power purchases (by relative magnitude), of Entergy's 2023 GHG Assertion. These tests have been designed and targeted at the greatest risk areas within Entergy's overall GHG inventory information management and data quality control system, namely the manual parts of the process.

15 Verification Procedures (Sampling Plan)

Summary of Procedures:

Organization Boundaries and Definition

B1: Organization Boundaries, Infrastructure, and Activities

B2: Review of Operating Conditions

Calculation

C1: True Up and Re-Performance Calculation

C2: Minor/*De Minimus* Emissions – Methodology and Documentation

Data Sources and Supporting Data

D1: Data Collection and Quality Controls

D2: Data Confirmation against External Sources

D3: Data Migration into Inventory

Assertion

A1: Final Verification Assessment

Z1 – Example Procedure Category – Example Procedure Title	
Introduction: This introduction serves to explain the reason the Verification Team is undertook the procedures described below. For instance, the inclusion of all emission sources ensures that the quantification of the total direct emissions satisfied the principle of completeness.	
Type of Evidence	The *Type of Evidence* can usually be grouped as: Physical Examination, Confirmation, Documentation, Observation, Inquiries of the Client, Re-performance, or Analytical Procedures.
Data Sources	The *Data Sources* describes the form in which the evidence is presumed or is known to be available to the Verification Team: Specific Documents or Assigned Positions, for example.
Objective (specific principles)	The *Objective* serves to focus the procedure as pursuant to one or more of the audit principles of: *Relevance, Completeness, Consistency, Accuracy, or Transparency*.
Specific Activities	• The *Specific Activities* are outlined here.
Error Conditions	• The anticipated *Error Conditions* are listed here to aid the Verification Team. • As the Sampling Plan is a living document, until the end of the verification process, additional error conditions may be identified during the execution of the procedures.

B1 – Facility Boundaries, Infrastructure and Activities	
Introduction: This procedure evaluates the boundaries as defined by the Responsible Party against the GHG Assertion.	
Type of Evidence	Documentation, Observation, Inquiries of the Client, Physical Examination
Data Sources	GHG Inventory Management Plan and Reporting Document (IMPRD), GHG Assertion, Previous GHG Assertions, Entergy Personnel, SEC 10-K and 8-Q filings, Annual Reports, Corporate Statistical Report
Objective (specific principles)	*Completeness, Consistency*
Specific Activities	1. Compared the GHG emission sources listed for the organization in the GHG Assertion against GHG emission sources listed in previous GHG Assertions. 2. Compared the GHG emission sources listed for the organization in the GHG Assertion against relevant Annual Reports, 10-K/8-Q SEC filings, Corporate Statistical Report, Entergy's website regarding operations and assets. 3. Compared the GHG emission sources listed for the organization in the GHG Assertion against observations made during site visits for completeness. 4. Interviewed Entergy personnel regarding changes to the GHG inventory, or any changes in operation which have occurred in the current reporting period. 5. Interviewed relevant Entergy personnel regarding completeness of inventory described in the GHG Assertion. 6. Compared total GHG emissions for each GHG emissions source in the current period against prior periods. 7. Evaluated the appropriateness and quantification of any *de minimus* emission sources.
Error Conditions	• GHG emission sources that were not reported in the GHG Assertion.

B2 – Review of Operating Conditions	
Introduction: This procedure utilized analytical procedures to identify changes in the scope of the GHG Assertion. This procedure is initiated during the verification planning stage.	
Type of Evidence	Analytical Procedures, Inquiries of the Client, Documentation (e.g., IMPRD)
Data Sources	GHG Assertion, Entergy personnel, data from major sources such as fossil generation units and purchased power
Objective (specific principles)	*Consistency, Completeness*
Specific Activities	1. Interviewed Entergy personnel regarding any operational issues which may have caused a significant change to the reported emissions (e.g., asset acquisitions/divestitures, change in operations/dispatch, etc.). 2. Compared total emissions for each GHG emissions source in the current period against prior periods.
Error Conditions	• Significant changes in emissions (including wide variances between 2023 data vs. earlier years, particularly for fossil units, such as CEMS data, or purchased power amounts through TRADES) do not constitute an error condition, but do warrant further investigation, and clarifications, as applicable.

C1: True Up and Re-Performance Calculations	
Introduction: As part of verification procedures, the calculations for each emissions source type were checked, with an emphasis on large stationary fossil plants (CEMS units) and purchased power, which together comprised ~70% of total corporate-wide GHG emissions for 2023. In order to ensure the accuracy of the GHG Assertion, the objective of this procedure was to re-perform the calculations independent from the calculations performed by Entergy.	
Type of Evidence	Documentation, Re-performance
Data Sources	2023 GHG IMPRD and the following: 1. Purchased power: a. Controllable trades (on daily basis from 1/1/2023 to 12/31/2023 from Grady Kaough) from TRADES (Excel), as well as sorted and purchased totals from Lesley Lucas (also in Excel) as double-check. 2. Large stationary fossil plants: b. Selected CEMS reports, for the 2 total units from the virtual site visit contact at the Ninemile Point Power Station (Units 4 and 5). The additional 14 power plants sampled for analysis of secondary methodology estimates (an ISO 14064.3 verification standard requirement) included the following power stations: <u>Coal</u> • Independence (1 and 2) • RS Nelson (6) • White Bluff (1 and 2) <u>Gas</u> • Acadia (CT3 and 4) • Attala (AO1 and 2) • Choctaw (CGT 1, 2, and 3) • Hot Spring (CT-1 and 2) • Lake Charles (1A and B) • Lewis Creek (1 and 2) • Montgomery County (CT1 and 2) • Ninemile 6 (A and B) • Perryville (1, 2, and 3) • Sabine (1 and 3-5) • St. Charles (1A and B) c. Coal purchasing (Garrett Branner) plant daily coal burn data, from three (3) coal plants. d. Gas settlements (Ryan Gay) gas burn data – all plants – monthly data on an individual plant-specific basis. e. CEMS supporting documentation and QA/QC back-up data for the virtual site visit units (Ninemile Point Units 4 and 5). 3. Small stationary combustion: 2022 data reported to EPA's GHG Reporting Program (GHGRP) through Subpart C.

Objective (specific principles)	*Accuracy, Transparency*
Specific Activities	<u>General</u> 1. Review documentation for completeness 2. Recalculate emissions numbers 3. Perform checks <u>Emissions Factors</u> 4. Calculate emissions from each emission source category from each sampled Facility 5. Confirm and re-calculate (if applicable) emission factors against independent reference material
Potential Error Conditions	<u>General</u> • Disagreement between calculated and reported values; • Disagreement between allocated values or inconsistent methodology. <u>Emissions Factors</u> • Incorrect or out of date emissions factors
Sample Unit	1. <u>Purchased Power</u>: a. All controllable trades (daily) extract in Excel b. Emissions totals for total purchased power on monthly basis 2. <u>Large Stationary Fossil Plants</u>: For the gas units at Ninemile Point (Units 4 and 5), Cventure requested similar information as above from the respective Environmental Managers/Analysts on site, including hourly CO_2 data for 2023 from the on-site CEMS data acquisition and handling systems ("DAHS"), and the following information for calendar year 2023 • Gas flow meter accuracy test/CEMS gas flow transmitter calibration annual analysis • ECMPS (emissions collection and monitoring plan system) feedback reports: Q4 (both units) • <u>Small stationary plants</u> – check "fossil fuel generating stations" emissions against EPA GHGRP data for 2022 for confirmatory checks against data and emissions numbers in the 2023 GHG Assertion.

C2 – Minor/*De Minimus* Emissions - Methodology and Documentation	
Introduction: In order to ensure that all relevant emission sources are included in the GHG Assertion, it is necessary to confirm that any *de minimus* emission sources have been appropriately excluded.	
Type of Evidence	Documentation, Discussions with Entergy's Environmental Reporting and Climate Manager
Data Sources	2023 GHG Assertion, IMPRD
Objective (specific principles)	*Accuracy, Transparency*
Specific Activities	1. Review minor/*de minimus* sources and discuss with Entergy 2. Compare to earlier year inventories (2011-2022)
Potential Error Conditions	Material emission source(s) improperly excluded from GHG Assertion
Sample Unit	N/A
Sample Size	Minor/*de minimus* emission categories and sources

D1 – Data Collection and Quality Controls	
Introduction: This procedure is intended to systematically review the Responsible Party's internal procedures and controls that are used to calculate the GHG Assertion.	
Type of Evidence	Documentation, Confirmation, Observation, Inquiries of the Client, Analytical Procedures
Data Sources	Data systems personnel, Entergy personnel, 2023 GHG IMPRD, Standard Operating Procedures and Manuals
Objective (specific principles)	*Completeness, Consistency, Accuracy, Transparency*
Specific Activities	1. Observe or interview Entergy personnel regarding the operation of data transfer systems, including manual data entry procedures and associated controls; 2. Review or interview Entergy personnel regarding on-site sampling, laboratory and other analytical procedures, etc.; 3. Compare original data sources to data in calculation systems for consistency;
Error Conditions	• Inconsistency between raw data and data supporting the 2023 GHG Assertion • Inconsistency and/or unclear links between information management systems that are of the most relevance to the underlying data for the 2023 GHG Assertion

D2 – Data Confirmation against External Sources	
Introduction: Where possible, this verification procedure was used to gather external evidence to confirm data sources used to quantify reported emissions.	
Type of Evidence	Confirmation, Analytical Procedures
Data Sources	Inventory Report and supporting external data/information: 1. Large fossil generating stations: a. CEMS data – EPA CAM AMPD emissions database query reports. b. Gas and coal burn data – monthly for all gas plants, and daily data for all coal plants sampled (all 12 months for 2023). c. All CEMS-related QA/QC documentation for Ninemile Point Units 4 and 5, and hourly CO_2 data for those units. 2. Small Stationary Combustion Sources – 2022 EPA GHG Reporting Program data submitted for all fossil generating stations.
Objective (specific principles)	*Accuracy*
Specific Activities	1. Review use of external data sources in GHG inventory for Appropriateness. 2. Compare reported/metered values to those provided by secondary source.
Potential Error Conditions	Unexplained, major discrepancy between metered/reported values and secondary source.
Sample Unit	Typically monthly or annual data primarily, with some cross-checks on daily data as relevant/applicable.
Sample Size	1. Large fossil generating stations: a. Gas and coal burn data – monthly (all 12 months for 2023) – for all gas plants, and daily data for all coal plants. c. All CEMS-related QA/QC documentation and hourly DAHS CO_2 emissions data for Ninemile Point Units 4 and 5. 2. Small stationary combustion sources – annual 2022 EPA GHG Reporting Program data submitted for all fossil generating stations.

D3 – Data Migration into Inventory	
Introduction: This procedure is intended to review the transfer of data from calculations into the final GHG Assertion, including any summary calculations that were required.	
Type of Evidence	Documentation, Re-Performance
Data Sources	2023 GHG Emissions Inventory Report, IMPRD, and discussions with Entergy's GHG Emissions Inventory Development Manager
Objective (specific principles)	*Accuracy, Transparency*
Specific Activities	1. Recalculate summary calculations performed by Entergy. 2. Compare calculated values to those in the GHG Assertion for transcription accuracy. 3. Back-calculate inferred emission factors for CH_4 and N_2O (vs. CO_2) from combustion sources. 4. Cross-check all other GHG inventory's emission factors against reference citation source's factors.
Potential Error Conditions	• Discrepancy between summary totals and individual source/emissions type values reported in the 2023 GHG Assertion
Sample Unit	Data reported in the final 2023 GHG Assertion
Sample Size	All relevant information and emissions values

A1 – Final Verification Assessment	
Introduction: This procedure is intended as a final review check of Entergy's 2023 GHG Assertion to ensure all required information is complete and all relevant documentation is included.	
Type of Evidence	Documentation
Data Sources	GHG Assertion
Objective (specific principles)	*Completeness*
Specific Activities	1. Review each page of the 2023 GHG Assertion and IMPRD for completeness and current information; and 2. Provide Responsible Party with documentation, namely a verification statement and report for voluntary reporting purposes.
Potential Error Conditions	• Incomplete, inaccurate, or missing information in the GHG Assertion
Sample Unit	Data fields in the GHG Assertion
Sample Size	All fields in the GHG Assertion