ACECOMPUTERS

Ace Computer's Corporate GHG Inventory FY2023

Table of Contents

1 Executive Summary

Ace Computers is a technology solutions provider with a remarkable track record spanning nearly 40 years. Our commitment to excellence has made us a trusted partner for federal, state and local governments, academic institutions, and Fortune 500 companies. We take pride in delivering high-quality computer products, suppliers, and services that are made in America. Our Mission at Ace Computers is to help clients stay connected and achieve mission success through industry-leading technology solutions. We understand the critical role that efficient and sustainable GHG Inventory reporting plays in achieving these goals.

Key Findings

Upon completion of this Corporate GHG Inventory study, Ace Computers has recognized a more complete reporting of GHG emissions than previously documented through past endeavors. Specifically, Ace Computers gained a fuller understanding of their Scope 3 emissions with the addition of CO2e(mt) accountings of: Purchased Goods and Services, Processing of Sold Products, Use of Sold Products and End-of-life. While this increased our total CO2e(mt) emissions from our last CSR Report, we had predicted that this would be the case and are pleased to have a more accurate accounting upon which to base our future policies, protocols and planning. Reviewing key drivers supply chain Ace Computers recognized increased GHG emissions from purchased goods and services (not previously captured). Distribution transport emissions rose significantly, contributing 14,799.5 metric tons of CO2e from logistics. This raised supply chain emissions from 2022 to 2023. Additionally, looking at key drivers of energy use in the operation facility, Ace Computers documented decreased GHG emissions from natural gas/electricity for heating/cooling compared to the previous year. Electricity for operations usage decreased by 8.6% (location-based) and 5.9% (market-based). Purchased RECs decreased by 11.7% and this should be revisited. Overall, these changes reflect a significant reduction in energy-related emissions within the facility from 2022 to 2023. Lastly, key drivers of product energy use and end-of-life uncovered initial accountings that had not previously been realized. In addition, product energy use and end-of-life processes saw a decrease in electronics scrap recycled waste declining 4.23%, but resulting in a shift to refurbished/recycled waste which increased significantly by 59.53%. This reflects a notable change in product energy use and end-of-life management from 2022 to 2023.

Recommendations

1) Continue and refine our strategy for and purchase of Renewable Energy Credits.
2) Investigate Offset credits as a potential way to reduce our GHG emissions footprint.
3) Continue our plans to reduce the amount of GHG emissions from distribution emissions.

---

2 Introduction

This report serves as a comprehensive analysis of the Ace Computers Corporate GHG Inventory, prepared in accordance with the **WRI GHG Protocol: Corporate Accounting and Reporting Standard** and the **WRI GHG Protocol Scope 2 Guidance: An Amendment to the GHG Protocol Corporate Standard**. This covers the reporting period from January 1, 2023, to December 31, 2023. It encompasses greenhouse gas (GHG) emissions from our owned facility operations, supply chain processes, product use, and end-of-life impacts. This is Ace's first and baseline Corporate GHG Inventory report. It examines the corporate GHG Inventory accounting implications and offers recommendations for improving sustainability in this area. By understanding the role of WRI GHG Protocol: Corporate Accounting and Reporting Standard in shaping the future of GHG accounting, Ace Computers and their stakeholders can make more informed decisions to reduce their GHG footprint and contribute to a more sustainable environment.

Ace Computers is committed to environmental stewardship and sustainable practices and this report reflects our dedication to transparency and accountability in our climate action efforts. Through our commitment to environmental responsibility, Ace Computers seeks to understand the critical role we play in the global effort to combat climate change. Our commitment extends beyond compliance to a genuine dedication to environmental stewardship. We strive to minimize our greenhouse gas (GHG) emissions and implement sustainable practices across all aspects of our operations. Our Corporate GHG Inventory report demonstrates Ace Computers' ongoing commitment to sustainability by reducing our environmental impact across all areas of operation.

3 Scope of Report

The scope of this report covers all products, at a corporate level, including:

- *Facilities:* All manufacturer-owned and leased facilities with significant responsibility for products declared to conform to this standard.
- *Supply Chain:* Emissions from raw material extraction through part and product fabrication.
- *Product Use:* GHG emissions resulting from the use of our products by consumers.
- *End of Life:* Emissions associated with the disposal or recycling of our products.

Ace Computers in Des Plaines, Illinois, follows a streamlined and efficient organizational structure, leveraging ISO Integrated Management System (IMS) practices. At the helm is the CEO/President, who oversees the company's overall operations. Key departments, including an Executive Management team, Quality Management, and Environmental Management, are each led by dedicated managers. These managers ensure compliance with ISO standards and report directly to the CEO/President, fostering a cohesive and integrated approach to management. This structure promotes continuous improvement and ensures that all processes align with Ace Computers' strategic goals and regulatory requirements.

At the manufacturer's discretion, no additional facilities and products beyond those required by the standard were included. It encompasses only facilities with Significant Responsibility for all products at the corporate level. Ace Computers claims Micro, Small, and Medium Enterprises (MSMEs) status and submits its declaration of same per EPEAT Climate Plus, Climate Change Mitigation. MSMe status is claimed, and the declaration was submitted to the EPEAT Registry.

Ace Computers, a small-scale computer integrator operating within the continental United States, has taken significant strides in aligning its operations with the EPEAT standards for environmental sustainability in electronic products. The company's commitment to reducing its carbon footprint is evident through the purchase of Energy Renewable Credits (RECs), which support renewable energy production and reduce greenhouse gas (GHG) emissions.

The primary GHG emissions for Ace Computers stem from the distribution phase, from the final product manufacture to the customer. To address this, we are reviewing our distribution practices to find efficiencies and cultivate better program-wide methods and protocols for distribution transport.

Ace Computers has engaged in a partnership with Com2Recycling, an R2 certified recycler, participating in their program for recycling on-site electronic waste. Ace Computers also offers a take-back program for consumers to return end-of-life products. This program operates through our partnership with Com2Recycling and our active steward membership with Call2Recycle.   This initiative not only ensures responsible e-waste management but also aligns with the company's broader sustainability goals.

Proudly participating in the Green Electronics Council's EPEAT program, Ace Computers' products meet the rigorous criteria of Energy Star certification, demonstrating energy efficiency and reduced environmental impact. The company also holds ISO certifications (9001, 14001, 27001, 28000, 45001 and 50001), which reflect its dedication to quality management, environmental stewardship, information security, supply chain security, occupational health and safety, and energy management.

In its supply chain practices, Ace Computers is mindful of the use of 3TG minerals—tantalum, tin, tungsten, and gold. Although not directly purchasing these minerals from mines, smelters, or refiners, the company recognizes their presence in components used in their products. Ace Computers is committed to sourcing these materials responsibly, with respect for human rights and without contributing to conflict, supporting development through ethical supply chain practices.

The company's corporate carbon footprint is meticulously tracked, with data utilized in annual CSR and Product transportation reports, as well as, Product Carbon Footprints, and, for the first time, this Corporate GHG Inventory report. Looking ahead, Ace Computers aims to complete its first Science Based Targets initiative (SBTi) process during quarter four of FY2024, setting actionable short and long-term goals for carbon footprint reduction.

Communication and collaboration with stakeholders are key to Ace Computers' approach. Regular engagement and a willingness to anticipate and meet stakeholders' needs demonstrate the company's proactive stance on sustainability. This comprehensive approach to environmental responsibility positions Ace Computers as a leader in sustainable practices within the technology sector, adhering to the principles of EPEAT standards.

4 Methodology

The methodology for calculating the Corporate GHG Inventory emissions is aligned with the WRI Corporate Accounting and Reporting Standard and WRI GHG Protocol Scope 2

Guidance: An Amendment to the GHG Protocol Corporate Standard and WRI GHG Protocol Scope 3 Standard -Corporate Value Chain Accounting & Reporting Standard. It includes the following categories:

Scope 1: Direct emissions from owned or controlled sources.
Scope 2: Indirect emissions from the generation of purchased energy.
Scope 3: All other indirect emissions that occur in the value chain.

---

5 Organizational Boundaries

By clearly defining our organizational and operational boundaries, Ace Computers ensures comprehensive and transparent reporting of our Corporate GHG Inventory emissions. We have adopted the organizational control approach for this reporting. Ace Computers will report on both their direct and indirect operational emissions.

Ace Computer's is limited in access to reliable and available information as an MSMEs. This can lead to gaps in data, making it difficult to compile a comprehensive and accurate inventory. Additionally, MSMEs may not have the necessary infrastructure or technology to track emissions effectively, further complicating the reporting process. We have addressed these limitations to the best of our ability and consistently work to improve our GHG reporting capabilities. Ace Computers reports that this data is as reliable as it can be based on publicly available and company source data.

Organizational Boundaries

Ace Computers defines its organizational boundaries using the "control approach" as recommended by the World Resources Institute. This approach considers all operations over which Ace Computers has financial control, regardless of equity share.

Organizational Structure

Our organizational structure encompasses our headquarters in Des Plaines, Illinois, and extends to any subsidiaries and departments that are financially controlled by Ace Computers. This includes entities where Ace Computers has the ability to direct the financial and operating policies with a view to gaining economic benefits from their activities[3].

Responsibility and Authority

The responsibility for environmental sustainability and reporting lies with the Management team and Sustainability Department at Ace Computers. They ensure that all emissions

data and sustainability policies and processes are developed, implemented, monitored and outcomes reported in alignment with WRI's GHG Protocol standards[3].

---

6 Operational Boundaries

Operational Boundaries

Operational boundaries refer to the emissions and activities that Ace Computers is responsible for. This includes both direct and indirect emissions associated with our operations.

Direct Operations

Our direct operations include all activities for which Ace Computers has full authority and control. This encompasses our manufacturing facilities, corporate offices, and data centers. All Scope 1 emissions fall within our direct operational boundaries.

Indirect Operations

Indirect operations cover activities such as procurement, business travel, waste, product distribution, product use and end-of-life. While these operations may not be directly controlled by Ace Computers, they are influenced by our corporate policies and practices. Scope 2 and Scope 3 emissions are accounted for within our indirect operational boundaries.

---

7 Emissions Data

The total Corporate GHG Inventory accounting revealed emissions of **29683 CO2e(mt)** location-based and **29518 CO2e(mt)** market-based**.** This is our baseline reporting for Corporate GHG Inventory emissions. We anticipate these emissions to increase in 2024 with better data capture of scope 3 emissions from upstream transportation. The emissions data was previously calculated using the EPA Simplified Calculator and was verified at the time of the Ace Computers CSR Report publication, was previously calculated and verified as part of the Ace Computers Product Transportation Report publication or was tabulated directly for this report and was reviewed by the verifier at the time of this publication. Prior to verification an internal review was conducted to check and review calculation methodologies.

Scope 1 Direct Emissions

- Leased Asset Upstream (natural gas consumption): 37 metric tons of CO2e

- Company vehicles: 13 metric tons of CO2e
- Refrigeration/AC Equipment Use: 5 metric tons of CO2e

Scope 2 Indirect Emissions

- Purchased electricity (Location Based): 339 metric tons of CO2e
- Purchased electricity (Market Based): 174 metric tons of CO2e
- Steam and heating: 0 metric tons of CO2e

Scope 3 Indirect Emissions

- Purchased Goods and Services: 12,542 metric tons of CO2e
- Capital Goods: 0 metric tons of CO2e
- Upstream Transportation: Undetermined
- Waste disposal: 11 metric tons of CO2e
- Business travel: 2 metric tons of CO2e
- Employee commuting: 15 metric tons of CO2e
- Transport Downstream (Distribution): 14,799 metric tons of CO2e
- Processing of Sold Products: 1366 metric tons of CO2e
- Use of Sold Products: 43 metric tons of CO2e
- End-of-life: 528 metric tons of CO2e

In addition, Ace Computers presents the following scope 3 emissions data based on the **GHG Protocol Scope 3 Standard -Corporate Value Chain Accounting & Reporting Standard**. Supply chain activities include scope 3 categories 1, 2, 3, 4, and 9. Operations include scope 1 & 2 (market- and location-based methods) and scope 3 categories 5, 6, 7, 8, 13, 14, and 15. Product use and end-of-life includes Scope 3 categories 10, 11 and 12. Ace Computers, situated at 340 Howard Ave., Des Plaines, IL, 60018, is determined to be the only manufacturing facility in scope for all manufacturing activity. Categories 4, 13, 14, and 15 have been excluded because they are neither possible nor reasonable for Ace Computers to calculate at this time or Ace Computers does not engage in the category at present.

No.	Category	GHG Emissions CO2e(mt) Market-Based	GHG Emissions CO2e(mt) Location-Based
1	Purchased Goods and Services ($USD)	12541.546 [2]	12541.546 [2]
2	Capital Goods ($USD)	0	0
3	Energy	174	339
4	Transport Upstream	Undetermined[1]	Undetermined[1]
5	Waste in Operations	11	11
6	Business Travel	2	2
7	Employee Commuting	15	15
8	Leased Asset Upstream (Nicor)	37	37
9	Transport Downstream	14799	14799
10	Processing of Sold Products (kg)	1366.589 [2]	1366.589 [2]
11	Use of Sold Products (kg)	43.487 [2]	43.487 [2]
12	End-of-life (kg) Server 8 years Laptops 3-5 years Desktops 3-8 years Workstations 5-7 years	527.999[2]	527.999[2]
13	Leased Asset Downstream	Not relevant[3]	Not relevant[3]
14	Franchises	Not relevant[3]	Not relevant[3]
15	Investment	Not relevant[3]	Not relevant[3]
	Total	**29517.86**	**29682.86**

[1] For a MSMe, such as Ace Computers, at the beginning of their sustainability journey and without financial means to costly software, the effort to determine Scope 3 emissions from transport upstream (categories 4) is neither possible nor reasonable.

[2] Expert estimate. Ace Computer's activities for purchased goods and services, processing of sold products, use of sold products and end-of-life were determined by estimates using economic allocation by US dollars (categories 1, 2, & 10), while process of, use of sold products and end-of-life were determined by estimates using physical allocation by weight, respectively (categories 11 & 12).

[3] Ace Computers does not engage in leased assets downstream, franchising, or investment activities (categories 13, 14, & 15).

Comparative Reporting of GHGs							
Category	CO2 (kg)	CH4 (g)	N2O (g)	HFCS	PFCS	SF6	NF3
Stationary Combustion	37,114.2	702.2	68.2	0	0	0	0
Mobile Sources	12,713.5	0	0	0	0	0	0
Refrigeration/AC	5,268.2	0	0	0	0	0	0
Fire Suppression	.2	0	0	0	0	0	0
Electricity (Location)	172,682	19,142	2,812	0	0	0	0
Business Travel Passenger Car Air Medium Haul (>= 300 miles, < 2300 miles)	77 2,184	2 10	2 69	0 0	0 0	0 0	0 0
Commuting	14,647	374	328	0	0	0	0
Upstream Transport/Dist.	4,088,978	38,485	113,048	0	0	0	0

8 Data Collection

Data Sources

1. https://www.epa.gov/sites/default/files/2020-12/documents/warm_electronics_v15_10-29-2020.pdf
2. https://www.epa.gov/sites/production/files/201906/documents/warm_v15_electronics.pdf
3. Ace Computers FY2023 CSR Report
4. Ace Computers FY2023 Product Transportation Report

Emission Factors

1. https://www.climatiq.io/data/emission-factor/5274b8d0-3a19-4813-856d-b3a314d55a84
2. https://www.climatiq.io/data/emission-factor/415152f6-5a99-478e-8eef-842db261c78e
3. https://www.epa.gov/system/files/other-files/2022-09/calculator_tool.xlsm

Calculations Tools and Software

1. EPA Simplified GHG Emissions Calculator: https://www.epa.gov/system/files/other-files/2022-09/calculator_tool.xlsm
2. Ace Computers Internal Product Transport Spreadsheet
3. Ace Computers Internal GHG Inventory Spreadsheet

9 Achievements and Goals

The report highlights our achievements in reducing emissions and outlines our goals for continuous improvement.[4,5] We have implemented energy-efficient technologies, are working to optimize our supply chain, and are exploring renewable energy options to further reduce our carbon footprint.

Reduction Initiatives

Ace Computers has implemented several initiatives to reduce our carbon footprint, including:

- Purchasing Renewable Energy Credits for our operations.
- Increasing use and efficiency of our waste to recycling programs.
- Promoting telecommuting and virtual meetings to reduce business travel.

Goals and Targets

Our goal, based on our Product Transportation baseline report for fiscal year 2023, is to reduce our distribution emissions by 10% by the year 2030, as this is our current emissions area of concern.

10 Verification

This report has been externally reviewed and verified against the WRI's GHG Protocol under the scope of reasonable, desk-top parameters. An external third-party verification has been sought to ensure the accuracy and reliability of our Corporate GHG Inventory emissions. The results have been verified by an external, independent verifier to ensure accuracy, completeness, consistency, relevance, and transparency.

11 Public Disclosure

The findings of this report are publicly disclosed and available at: https://acecomputers.com/company/sustainability-computer/

12 Exclusions & Limitations

The exclusions or limitations of GHG Inventory emissions are documented and justified, within this report, in accordance with the WRI GHG Protocol.

13 Conclusion

Ace Computers is committed to transparency and continuous improvement in our sustainability efforts. This Corporate GHG Inventory report represents our dedication to understanding and reducing our environmental impact. We will regularly review and update our GHG inventory to reflect the most accurate data and to track our progress towards our emissions targets.

14 References

1 https://acecomputers.com
2 https://ghgprotocol.org/corporate-standard
3 https://craft.co/ace-computers
4 https://www.wri.org/research/greenhouse-gas-protocol-us-public-sector
5 https://www.wri.org/initiatives/greenhouse-gas-protocol

15 Acknowledgements

Contributors: Ace Computers would like to thank the following people and organizations for their work and input toward generating this report: Nicole DeSalvo - Global Product Sustainability and Compliance Associate, Liz Hartranft - Global Product Sustainability and Compliance Manager, Amber Robert – Director of Compliance Sustainability and Quality, Leyda Golemo - Program Manager ADMC-3/Office Manager, Daniel Arendt – Director of Technology, Ace Computer's vendors, Global Electronics Council's Electronic Products Environmental Assessment Tool Conformance Assurance Body (GEC EPEAT CAB).

Ace Computers Stakeholders include owners, managers, employees, suppliers, voluntary programs which include Energy Star and EPEAT, society, government, and customers.

16 Revisions

Ace Computers will review the Corporate GHG Inventory once annually and update accordingly. All revisions/updates will be documented in the Revision History Table below and will be reposted on Ace Computers' public website.

Revision History Table		
Date	**Description of Change**	**Approver**
October 2024	Initial Release	L. Hartranft