Ace Computers

Corporate Sustainability Report 2020

Property of: Ace Computers

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Revised Date: June 2021 **Approved by John Samborski, PE & Daniel Arendt**

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Executive Summary

Ace Computers is committed to continually reducing the amount of Pollution created in its assembly/ integration facility by offering recycling solutions for IT equipment and by properly reducing, reusing and recycling its packaging material. Ace Computers maintains an Environmental Management system that it is proud of and one that complies with all of its legal and other defined environmental requirements. Using the protocols established by the WRI/WBCSD GHG and advised by ICF international in conjunction with Cventure has determined that the total greenhouse gases utilized by Ace Computers for fiscal year 2020 (which runs 5/19 – 5/20) was **581.85** Metric tons of CO_2 equivalent (CO_2e) emissions. We have documented the total electrical, natural gas, water use, air travel miles and rental car use for the period covered. This has been verified and several improvements have been suggested for use in future reports. This total results from the combination of Scope 1, 2 and 3 emissions.

Common Sources of Federal Greenhouse Gas Emissions

SCOPE 1: Greenhouse gas emissions from sources that are owned or controlled by a Federal agency.

SCOPE 2: Greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by a Federal agency.

SCOPE 3: Greenhouse gas emissions from sources not owned or directly controlled by a Federal agency but related to agency activities.

(GRI) Index

1. Strategy and Analysis		Information Links
1.1	Statement from the most senior decision-maker of the organization (e.g., CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and its strategy.	**Statement from Ace Computers' President**

2. Organizational Profile		Information Links
2.1	Name of the organization.	Ace Computers
2.2	Primary brands, products, and/or services.	**Primary Brands, Products**
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	**Operational Structure**
2.4	Location of the organization's headquarters.	Ace Computers' corporate HQ office is located in Elk Grove Village, Illinois USA
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	Countries of Operation USA
2.6	Nature of ownership and legal form.	Ace Computers is a privately own company
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	**Markets Served**
2.8	Scale of reporting organization, including: - Number of employees; - Net sales (for private sector organizations) or net revenues (for public sector organizations); - Total capitalization broken down in terms of debt and equity (for private sector organizations); and - Quantity of products or services provided.	Ace Computers reports this information to persons with Financial interests in the company.
2.9	Significant changes during the reporting period regarding its size, structure, or ownership including: - The location of, or changes in operations, including facility openings, closings, and expansions; and - Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations).	Nothing to Report
2.10	Awards received in the reporting period.	Awards Received None

Environmental		
Environmental: Disclosure on Management Approach		Information Links
EN	DISCLOSURE ON MANAGEMENT APPROACH Provide a concise disclosure on the Management Approach items outlined below with reference to the following Environmental Aspects:	Environmental Disclosure on Management Approach

- Materials;
- Energy;
- Water;
- Biodiversity;
- Emissions, Effluents, and Waste;
- Products and Services;

- Compliance;
- Transport; and
- Overall.

Environmental Performance Indicators	
Aspect: Materials	**Information Links**
EN1 Materials used by weight or volume. See Indicator Protocol for guidance on calculation.	Materials Used
EN2 Percentage of materials used that are recycled input materials	Use of Recycled Input
Aspect: Energy	**Information Links**
EN3 Direct energy consumption by primary energy source.	Direct Energy Use
EN4 Indirect energy consumption by primary source.	Indirect Energy Use
EN5 Energy saved due to conservation and efficiency improvements.	Energy Saved
EN6 Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives.	Product Energy Saved
EN7 Initiatives to reduce indirect energy consumption and reductions achieved.	Reduce Indirect Energy
Aspect: Water	**Information Links**
EN8 Total water withdrawal by source.	All of Ace Computers' water consumption is municipal water. Ace Computers has therefore not established a metric for water withdrawal by source.
EN9 Water sources significantly affected by withdrawal of water.	All of Ace Computers' water consumption is municipal water. Ace Computers has therefore not established a metric for water withdrawal by source.
EN10 Percentage and total volume of water recycled and reused.	All of Ace Computers' water consumption is municipal water. Ace Computers does not have a means to reuse water. Water used at Ace Computers is not used within any manufacturing process.
Aspect: Biodiversity	**Information Links**
EN11 Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	Ace Computers' Facility is not located in or near areas of high biodiversity value.
EN12 Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	Ace Computers' operations and products do not have a significant impact on biodiversity.
EN13 Habitats protected or restored.	Ace Computers' operations do not have an adverse impact on biodiversity.

EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	Ace Computers' operations do not have an adverse impact on biodiversity.
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	There are no species with habitats in the area. Ace Computers' operations do not have an adverse impact on biodiversity.

Aspect: Emissions, Effluents, and Waste		Information Links
EN16	Total direct and indirect greenhouse gas emissions by weight.	**Direct, Indirect Greenhouse Gas**
EN17	Other relevant indirect greenhouse gas emissions by weight.	Ace Computers does not currently track any other indirect emissions.
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	**Greenhouse Gas Reductions**
EN19	Emissions of ozone-depleting substances by weight.	**Ozone-Depleting Emissions**
EN20	NOx, SOx, and other significant air emissions by type and weight.	None
EN21	Total water discharge by quality and destination.	Ace Computers does not have any waste water that is a result of any of their business production or business processes.
EN22	Total weight of waste by type and disposal method.	**Responsible Operation**
EN23	Total number and volume of significant spills.	None. Ace Computers does not produce any hazardous waste products or by products.
EN24	Weight (in kilograms or metric tons) of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	None. Ace Computers does not produce any hazardous waste products or by products.
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	All of Ace Computers' water consumption is municipal water. Ace Computers has therefore not established a metric for water withdrawal by source. Ace Computers does not have any waste water as a result of their business production or business processes. All water use is from normal human consumption, washing, cleaning, etc. All wastewater streams are from human uses, not industrial uses. There is no water used as part of any processes in the plant.

Aspect: Products and Services	Information Links

EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	**Product Stewardship**
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	**Sold Products Packaging Reclaimed**

Aspect: Compliance		Information Links
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	None

Aspect: Transport		Information Links
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	**Transport Impact**

Aspect: Overall		Information Links
EN30	Total environmental protection expenditures and investments by type.	**Environmental Protection Expenditures**

Ace Computers Corporate Environmental Policy and Philosophy

"Pursue the material and spiritual well-being of employees, customers and all stakeholders surrounding Ace's business through rightly contributing to the progress and advancement of society."

Ace Computers is dedicated to providing computer products and services that meet or exceed the quality, operational performance and life cycle cost requirements of our customers.

At Ace Computers we strive for continuous improvement of our environmental system by incorporating the best possible practices through our waste management and IT products recycling initiatives.

We understand that the achievement of reducing the amount of pollution and waste into our natural environment must rely, to a large extent, on each individual member of the corporate team. All employees, with the full support of management, must personally contribute to the goal of reducing, reusing and recycling our products and the waste we produce.

Ace Computers is committed to continually reducing the amount of Pollution created in its manufacturing plant by offering recycling solutions for IT equipment and by properly reducing, reusing and recycling its packaging material. Ace Computers maintains an Environmental Management system that it is proud of and one that complies with all of its legal and other defined environmental requirements.

By promoting this policy statement throughout the company, Ace Computers ensures the cooperation of all departments involved throughout the warehousing servicing and manufacturing areas in the company. Documented procedures are used as a guide in maintaining this control.

Under this management philosophy, Ace Computers strives to establish a sustainable business by providing high performance and high-quality products at reasonable prices and in return earn long-term customer's trust from the national market.

Locating our headquarters operation, development and manufacturing operations in the center of the USA allows us to quickly and more precisely respond to market needs and enables us to better serve our customers and business partners nationwide, while maintaining high quality production of technically advanced products. Chicago has been a historic transportation hub for its entire history, nearly 200 years. We aim to keep it in a prominent role for a transportation center of outbound goods.

In recent years, as environmental consciousness has become more important, Ace Computers started to take firm corporate initiatives toward environmental protection.

From the product development perspective, we have always been environmentally conscious in our designs as our founder was a degreed environmental engineer and anxiously sought to incorporate more environmentally friendly technologies into our product line as a way to distinguish them from our competition. Innovations such as our product line incorporating features like Power Factor

Correction (PFC) power supplies and "80Plus" technologies in our "Vision Series" desktop line for which we were formally recognized by the US government in 2003 at the Federal Office Systems Expo (FOSE) well before there even was an "80Plus" program. Our current desktop line is our 13th generation of the "Vision Series" desktop line.

Today since there are more eco-technologies available, we place strong emphasis toward adopting as many green concepts and technologies as possible in our new products such as low power consumption functions, recyclable materials and reduction of hazardous substance usage, in order to provide greener products to the market.

There have been many new environmental related regulations being introduced recently, such as RoHS, Energy Star and StEP for e-waste issues, and the social responsibilities for environmental protection are becoming critical for corporations. We highly respect these responsibilities and comply with these regulations and strictly satisfy all these requirements.

All newer products are more environmentally friendly than past products are going to be our standards going forward. We intend to introduce more products with higher efficiency power supplies for the desktop space as well.

As for our mid to long-term corporate commitments, we consider the development of environmentally friendly products as one of the most important corporate objectives for our business operations. Through these activities, Ace Computers intends to contribute to a better environment.

Last and of most importance, I would like to extend my sincere appreciation to all those related with Ace Computers for warm and sincere support including our component partners, vendors and customers. We relentlessly improve ourselves to become better partners and citizens of the Earth.

Marianne E. Kennefick
President
Ace Computers

Primary Brands, Services

GRI 2.2

Ace Computers is a US based privately owned company serving the needs of customers requiring computing solutions and hardware. **Ace Computers is committed to delivering the ultimate customer satisfaction by providing Reliable, Innovative and Flexible computing solutions and by continuously improving our product and service offerings.**

Ace sells its products under the ACE brand name and has the name "Ace Computers" trademarked in the US Patent and Trademark office. We also have multiple models utilizing the model names "LogiCAD", "Vision", "Raptor", "Mustang", "FORCE" and others which are not trademarked primarily because we have never felt we were large enough to need it. Our products are sold into a tight silo of customers and as we do not sell to the public/consumers, we do not need this level of protections.

The Environmental Management System assures that Ace's computer products, their manufacturing, their delivery, and their recycling are processed under the control of this system. The System is designed to adhere to ISO 14001:2015 standard. The system assures conformance to legal and the company's environmental policy and provides objective evidence of effective control.

Operational Structure

The organizational structure of those functions, which may impact on the EMS, is described in the attached organizational chart. Each major function of the organization is positioned so as to allow the effective implementation of the Environmental Management System. The Management Representative has the necessary authority to resolve environmental issues and the organizational freedom of reporting directly to the President, so as to alleviate conflicts with other considerations.

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Ace Computers
May 21, 2020
Management Structure

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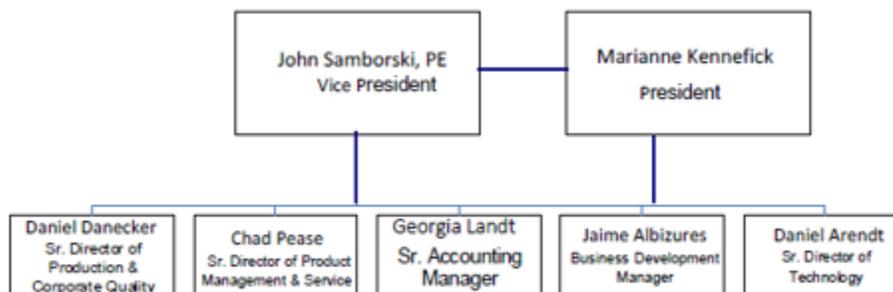
Responsibility and Authority

The environmental system is the responsibility of each employee of Ace Computers. The following are specific quality-related responsibilities of Ace Computers as they relate to the organization chart.

President

Oversees all company operations. Co-ordinates Management staff to attain company goals. Oversees the reviews of Corrective and Preventive actions with the Management Representative at Management meetings to ensure effective actions and follow-up are completed. Acts as the ultimate authority in the event of dispute in Environmental issues. Ensures that appropriate resources are available to all departments to complete corporate functions, including the ability of departments to hire or train personnel for all activities, including performance of work, verification of activities, and internal quality audits.

Senior Accounting Manager

Oversees financial operations at Ace Computers. Co-ordinates financial staff to close company books accurately. Provides accurate and timely financial information to assist the President in making corporate decisions.

Senior Director Production & Corporate Quality (Management Representative)

Oversees Quality Management System and Production operations. Verifies the implementation and follow-up of solutions. Schedules internal audits and provides reporting and follow-up to the management team as a basis for improvement of the Quality and Environmental Management System.

Senior Director Product Management

Overseas purchasing activities. Ensures purchases are made in accordance with ISO 14001:2015 guidelines and Ace Computers Environmental Management System Procedures, and that suppliers are evaluated.

Service Manager

Handles service operations in accordance with ISO 14001:2015 guidelines and Ace Computers Quality and Environmental Management System Procedures. Oversees activities of the Customer Support Group. Develops and authorizes procedures for Technical Services and Support.

Markets Served

GRI 2.7

Ace Computers is a US based company which after 36 years of operation now primarily markets both Ace manufactured products and globally branded party products to the US Federal Government, Educational Institutions, Value added-resellers and select corporations. Ace Computers takes pride in being able to expertly tailor its solutions to the specific needs of customers in the Federal Government, and hold multiple contracts in the US Government including the military, civilian agencies and world renowned institutions nationwide.

Business History

1983: Established in Madison, Wisconsin as an Apple® II peripheral manufacturer.
1983: Established ACE branded computer offerings, originally as an Apple® II compatible and soon thereafter to Intel® compatible platforms.
1989: Start manufacturing Intel® 80486 based platforms with tremendous growth.
1993: Start manufacturing Intel® Pentium® based PC's for the corporate market.
1994: Focus sales towards vertical markets - Education, Engineering, Government agencies
1998: Became the world's 2nd Intel® Premier™ Provider(Now called Technology Provider-Platinum)
2001: Became Microsoft® Gold™ System Builder
2002: Established 5-year GSA Schedule Contract for sales to the US Government.
2003: Entered the VAR 500 of top 500 VARs/resellers in the US.
2004: Received award from Federal Office Systems Expo for "Best Government Desktop" - Vision Series 2006: Entered into Energy Star agreement with the US EPA for Green technologies
2008: ACE obtains ISO-9001:2008 quality system certificate
2009: ACE establishes 5-year contract with Western States Contracting Alliance (WSCA)
2009: Enters into an agreement with EPEAT for environmental registration of our products
2011: Establish new 10-year contract with the State of Wisconsin for Ace branded personal computers.
2012: Establish new 10-year contract with the State of Georgia for Ace branded personal computers.
2013: Establish new 6-year contract with the US Air Force for "NETCENTS 2"
2014: Establish new 10-year contract with NASA (SEWP V) to start in 2015 and run until 2025.
2014: Renewed for NASPO-Valuepoint (New identity for WSCA Contract) – 2015-2022.
2015: Establishes remote offices for sales – home offices exclusively in Denver, Irvine, Dallas, Minneapolis, Orlando, New York and Virginia.
2016: Establish new Contract with the US Air Force – Client Computing Solutions 2 to start in 2017 and run until 2022.
2017: Renewed for University of Wisconsin Blanket Contract for High Performance Computing Products- to start 2018 and run through 2022.
2018: Establish new home offices in Phoenix, Las Vegas, and Boise.
2019: Win award from Intel for "Data Center Partner of the Year" March 2019.
2020: Established new contract with the US Army for "Army Desktop and Mobile Computing 3" which will start in fall of 2020 and run until 2029. Funded to the $5 billion level, it will be a significant contributor to the bottom line in the future. Ace's award is solid, outcome of several protests needs to be resolved before the contract can start.
2020: Establish new home offices in Charleston, SC, Austin, TX and Orlando, FL Closed office in Phoenix, Denver and Boise.

Disclosure on Management Approach

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ENVIRONMENTAL POLICY
of
ACE COMPUTERS

Ace Computers is committed to
continually reducing the amount of Pollution
created in its manufacturing plant
by offering recycling solutions for IT equipment
and by properly
reducing, reusing and recycling its packaging material.
Ace Computers maintains an
Environmental Management system that it is proud of
and one that complies
with all of its legal and other defined environmental requirements.

_____
President

May 25, 2020

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Planning

Ace Computers has an Environmental Plan that consists of the Environmental Objectives, Environmental Manual and the Ace Computers Environmental Management System procedures. By following the Environmental Manual and the Environmental Management System procedures, and by striving to meet the Environmental Objectives, Ace Computers is able to comply with the requirements of the ISO 14001:2015 specifications. If it becomes necessary to implement any procedures or policies that are not currently in Ace Computers' Environmental Plan, then a Plan using the guidelines for planning as per the ISO 14001:2015 guidelines shall be used.

Management Representative

The President has appointed Director of Production as the Management Representative for the Environmental Management System. The Director of Production has defined authority and responsibility for ensuring that the Ace Computers Environmental Management System complies with the requirements of ISO 14001:2015, and that the Environmental Management System is maintained, effective and continually improved.

These responsibilities are carried out through periodic Management System audits, and by completing the appropriate corrective actions. Additional responsibilities include:

- Ensuring the efficiency of the Environmental Management System is continuously improved

- Training Ace Computers personnel in regard to the EMS.

- Maintaining registration to ISO through internal and external audits, and monitoring corrective actions resulting from those audits to ensure they are eventually closed out and effective.

Internal Communication

Ace Computers Management ensures that there is a communication process in place regarding the effectiveness of the environmental management system. This is done in many ways, including the Ace Computers Intranet, email and verbally. Ace Computers does not communicate externally about its environmental aspects.

Management Review

Each Process of the Environmental Management System shall be reviewed annually, as a minimum, to assess and demonstrate the effectiveness of the system.

If necessary, additional reviews may be held. The Director, Production & Corporate Quality shall schedule and conduct review of the Environmental Management System with the NM management team in attendance. The following topics are available for address during these review meetings to help ensure compliance with the ISO 14001:2015 standard:

- Environmental policy

- Environmental Objectives

- Results from internal and external audits, and the effectiveness of their corrective and preventive actions

  - Improvements to the Environmental Management System

  - Follow up of previous environmental reviews.

  - Changes that could affect the environmental management system.

  - Communications from external interested parties, including complaints

  - The Director of Production is responsible for maintaining the meeting notes from Management reviews, and any decisions or agreed-upon actions captured during reviews.

  - The management reviews will produce decisions and actions related to:

  - Improvements of the effectiveness of the Environmental Management System and its processes

  - Possible changes in the environmental policy or objectives

Resource Management

Ace Computers Management is committed to having a trained and effective team in order to implement and maintain the environmental management system and continually improve its effectiveness. Managers are responsible for determining training needs of their personnel, based on their qualifications, education, and the qualification requirements of individual employment positions as Management determines them for future needs fulfillment

Operational Control

Ace Computers plans those operations that are associated with the identified environmental aspects consistent with its environmental policy, objectives and targets. The details of this plan are documented in the Operational Control Procedure.

Emergency Preparedness and Response

Ace Computers does not produce a product where the product itself or any byproduct is harmful or poses any risk to any employees or the environment.

Determining Significant Environmental Aspects

Ace Computers' Management team has constructed a list of environmental aspects. This list will be a controlled document called the Environmental Aspects list. It will contain all aspects that were considered and ones that were considered to be significant.

Once the list of Environmental Aspects is created the management team will meet to unanimously decide which ones are significant for Ace Computers. The Environmental Aspects list will be updated to reflect the significant aspects.

Ace Computers' Management team will meet annually to review the Environmental Aspects list to ensure that it is still current.

General

Planning of product realization ensures that all quality objectives, environmental objectives and requirements of the product are outlined and available as reference to produce a product that satisfies both customer and corporate requirements. All components used in the designing of Ace Computers PC systems are RoHS certified by the component manufacturer verifying that compliance has been met to the above standard.

Ace Computers' planning of product realization aims to reduce the amount of purchased packaging used to ship its computer systems to clients. Ace Computers strives to reduce the amount of purchased system packaging material by providing customers with the option of allowing Ace Computers to ship using reusable original packaging.

Ace Computers provides its customers the option of returning IT equipment for recycling and proper disposal. Ace Computers will provide this service through the web and will pick up from the customers site and will then properly dispose of the equipment for a fee.

The following Table includes Environmental Aspects that were taken into consideration over the last reporting period.

No.	Area	Aspect	Impacts	Rationale	Severity	Probability	Potential for Increased control	Total Score	Is it Significant?
1	Operations (design, manufacturing, packaging and distribution use and end of life)	Reduce the use of new packaging material whenever we can re-use packing (cardboard boxes, system bags, foams chips, etc)	Less waste being put into landfills.	This is one area of our process that we have significant control over. One of our Objectives deals with the reduction and reuse of packaging materials.	1	5	5	11	Yes

2	Operations (design, manufacturing, packaging and distribution use and end of life)	Offer to customers a proper solution to dispose of their obsolete IT equipment	Divert toxic materials in computer products from landfills and potential environment leakage. Also reuses natural resources already extracted at least once.	This is one area of our process that we have significant control over. Our EMS addresses recycling of our product and other company's product to minimize the environmental impact.	2	5	5	12	Yes
3	Operations (design, manufacturing, packaging and distribution use and end of life)	Maximize floor space efficiency to use less power/electricity	Less energy used in our production means less impact on environment from energy production and transmission.	We excluded this because our design of our new facility already took this into consideration when we design the space in 2013.	2	3	3	8	No
4	Operations (design, manufacturing, packaging and distribution use and end of life)	Review manufacturing process to minimize energy consumption. New burn-in procedure powers down equipment after testing instead equipment running throughout non working hours	Less energy used in our production means less impact on environment from energy production and transmission.	New imaging process decreases imaging time from 10 minutes to 3 minutes x 4,000 units annually	2	3	3	8	No
5	Operations (design, manufacturing, packaging and distribution use and end of life)	Order/deliver in bulk whenever possible.	We have less shipments to and from our facility by have products delivered in bulk which decreases the amount of fuel expended during delivery by minimizing the about and trips and the volume of the product being delivered.	We have been doing this for many years and will continue to do so. Impact is minimal based on current operating model.	1	5	5	11	Yes

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6	Operations (design, manufacturing, packaging and distribution use and end of life)	Disposal of packaging products (Shrink wrap nylon strapping)	Materials going to the landfill.	Trash and recycling partner Groot Industries is assisting us to divert the majority of our garbage to recycling. We also recycle all of our metals, case plastics, circuit boards and LCD's with MRK, Ltd.	2	5	5	12	Yes
7	Operations (design, manufacturing, packaging and distribution use and end of life)	Disposal of non-recyclable cardboard (motherboard boxes) and polystyrene (OEM packaging)	Materials going to the landfill.	Using Groot Industries has taken care of these types of boxing. Investigating possible polystyrene solution.	1	5	5	11	Yes
8	Operations (design, manufacturing, packaging and distribution use and end of life)	Reduce cooling loss in production area by installing doors/plastic windows	Less energy used in our production means less impact on environment from energy production and transmission.	We have isolated the warehouse from the production area to minimize loss of cool air in the summer to reduce the energy used in cooling the building.	1	3	3	7	No
9	Operations (design, manufacturing, packaging and distribution use and end of life)	Company vehicle emissions (Gas vs. Diesel)	Emissions from operations of motor vehicles with internal combustion engines.	All of our vehicles are tested annually by the State of Illinois through its' "AIR TEAM" prior to the renewal of license plates for all vehicles over 3 years old. We are in compliance with all State environmental regulations.	1	3	3	7	No

10	**Operations (design, manufacturing, packaging and distribution use and end of life)**	**Product Development**	**Recycling impact**	We design product to meet specific customer requirements and all of our motherboards in our products are RoHS compliant.	**2**	**3**	**3**	**8**	**Yes**
11	**Operations (design, manufacturing, packaging and distribution use and end of life)**	**Re-use/recycle pallets**	**Materials going to the landfill.**	We recycle all unneeded pallets to a third party that reuses the pallets.	**1**	**5**	**5**	**11**	**Yes**
12	**Operations (design, manufacturing, packaging and distribution use and end of life)**	**Bulk software kits 10 kits per 1000 systems**	**Materials going to the landfill**	We no longer ship software kits to our customers unless the client has a specific requirement for them.	**1**	**3**	**5**	**9**	**No**
13	**Environmental aspects (emissions)**	**Waste water disposal**	**Pollution of the environment**	Our manufacturing process does not have any waste water. Our water emissions are from personal use and are treated at the municipal waste water facility. We have our property tied into separate storm and waste water systems.	**1**	**1**	**1**	**3**	**No**
14	**Environmental aspects (emissions)**	**Electricity – lights off at nights, No AC in Warehouse**	**Less energy used in our facility means less impact on environment from energy production and transmission.**	We installed LED lighting in the entire building in 2014 and we have purchased a new building that is not online yet and one of the retrofits made was to completely	**1**	**3**	**5**	**9**	**No**

				replace all the lighting with LED lighting.					
15	Environmental aspects (emissions)	Systems/Monitors go into "sleep state" (turn on green features on the company's PCs).	Less energy used in our facility means less impact on environment from energy production and transmission.	We have most of the PC's left on 24 hours a day due to requirements for remote logins by staff and accessing security keys to access federal systems but now they are put into sleep mode rather than idle mode which saves power.	1	3	5	9	No
16	Environmental aspects (emissions)	Heating costs and use of thermostats	Less energy used in our facility means less impact on environment from energy production and transmission.	We have zoned thermostats to have better control over the HVAC system to minimize energy usage.	1	3	3	7	No
17	Environmental aspects (emissions)	Duplex printing	Reduce the materials being delivered to the office and leaving to go into the landfill	This allows printing on both sides of sheets of paper for most submittals, correspondence and other printing needs.	1	4	4	9	No
18	Environmental aspects (emissions)	Develop a paperless office program	Reduce the materials being delivered to the office and leaving to go into the landfill	Managers will meet to discuss what changes we can make to use "less paper" this year. This was not completed and needs to be addressed by management.	1	3	5	9	No

19	Environmental aspects (emissions)	Recycle aluminum beverage containers, glass, plastics of all types (non-production), newspapers and paper (and shredding of sensitive documents)	Reduce the materials being delivered to the office and leaving to go into the landfill	We have included it and it is working well.	1	5	5	11	Yes
20	Environmental aspects (emissions)	Energy Star kitchen appliances	Less energy used in our facility means less impact on environment from energy production and transmission.	New refrigerator was highest efficiency yet.	1	3	3	7	No
21	Areas of Influence (Contractors and suppliers)	Janitorial services and products used by the contractor	Use of chemicals that are being discharged into the water system	Our janitorial service provider uses bio degradable products in our facility for cleaning.	3	3	3	9	No
22	Areas of Influence (Contractors and suppliers)	Building and HVAC maintenance and emissions. Evaluation of Midwest HVAC Corp to properly handle our HVAC system upkeep and maintenance.	Emissions of substances from the HVAC system into the environment. And proper disposal of refrigerants.	The HVAC system is currently being maintained by factory certified (Carrier) technicians.	2	3	3	8	No
23	Areas of Influence (Contractors and suppliers)	Lawn care	Runoff into the drainage ditch that borders the property and storm system that impacts the water downstream.	The use of lawn care products is used according to the municipal by-laws currently in effect.	2	3	3	8	No
24	Emergency Situation and abnormal operations	None	Potential impact on operating effectiveness.	None	0	0	0	0	No

Product Stewardship

Ace Computers takes responsibility for minimizing the environmental impacts of the products that we sell and support while they are in use and at the point where our clients require decommissioning them. We have many initiatives directed to the proper disposal of hardware.

We understand that the achievement of reducing the amount of pollution and waste into our natural environment must rely, to a large extent, on each individual member of the corporate team. As such, all employees, with the full support of management, contribute to the goal of reducing, reusing and recycling our products and the waste we produce.

In this regard, Ace Computers also works with committed partners that exhibit a focus on Sustainable Development and Green procurement.

Find out more about how Ace Computers' commitments and green programs on our website.

Sold Product Packaging Programs

On top of recycling the product that we sell, Ace Computers also offers packaging take back programs for the products that we manufacture.

Before increasing the amount of unnecessary packaging shipped to a customer, Ace Computers offers a bulk packaging program where we will bulk ship Ace Computers systems to our clients with 100 % corrugated plastic packaging and is designed to be returned like a bottle deposit, although we do not charge clients for this packaging and we facilitate their returns. The result of using this packaging is more than 60% less waste in discarded packaging. We do this by offering consolidated packaging that fits up to 30 computer systems into one bulk pack instead of individually packing each machine which produces a lot of unnecessary waste for some of our customers. We also have a method which take zero packaging at all that we call "rolling thunder" where systems are strapped to rolling aluminum racks and shrink wrapped and shipped in our own trucks to local customers and the truck pulls up to the dock and the computers are rolled off on the carts to the place where they are to be deployed and unstrapped and deployed to the desktops of the client. No packaging waste at all and the rolling racks are simply rolled back to the truck and taken back to Ace HQ.

Ace Computers has an environmental objective to ship at least 40% of our systems in this manner when it is feasible to our customers to receive it that way. We are pleased to announce that we have successfully met that target in FY 2020 for local clients. This does not work practically for shipments that need to cross the country, however but it is a start and we are working on bulk packaging for outside the area shipments but the military is objecting to this because they ship the product so often.

Material Used

GRI EN 1

Ace Computers' purchases are typically a finished good, high level assembly, or services. Therefore, specific measures of weights are not universally available or part of our measurements.

We do no low-level manufacturing in our facility, only assembly operations.

Use of Recycled Input

GRI EN2

Ace Computers has achieved its objective to bring the usage of recycled material for packaging new computers to 50% of the total number of computers sold.

Ace Computers' planning of product realization aims to reduce the amount of purchased packaging used to ship its computer systems to clients. Ace Computers strives to reduce the amount of purchased system packaging material by providing customers with the option of allowing Ace Computers to ship using reusable original packaging.

Ace Computers provides its customers the option of returning IT equipment for recycling and proper disposal. Ace Computers will provide this service through the web and offer local pickups or customers may ship to Ace or to our designated recycler directly.

Scope 1 Emissions

Emissions – Natural Gas

Ace Computers' operations do not release significant quantities or greenhouse gases (GHG), so the company's greatest potential impact is an indirect one, through the release of CO_2 by the utility companies providing the electricity used. This has helped drive Ace Computers' focus on energy conservation. Our energy conservation efforts have benefitted both the environment and our bottom line. Ace Computers is committed to the conservation of energy and through this commitment is also committed to the reduction of GHG caused by Gas and Electricity consumption. Measurement of Natural Gas Used, 2019-2020: Gas usage is primarily in the wintertime since we have no gas operated appliances beside the HVAC units. Our winter in 2019-20 (defined as November - May period) was not as bad as 2019 and our overall gas consumption decreased from 8377 to 8151 CCF's vs the 2018-2019 period.

Northern Illinois Gas Company Readings

Reading Date	Meter Reading	Reading Details	CCFs	Therms	Days Used
5/20/2020	9248	Actual	386	405.3	30
4/22/2020	8862	Actual	776	814.8	30
3/23/2020	8086	Actual	1165	1222.08	30
2/20/2020	6921	Actual	1822	1909.45	33
1/21/2020	5099	Actual	1413	1479.41	30
12/19/2019	3686	Actual	1519	1588.87	32
11/19/2019	2167	Actual	857	895.56	30
10/18/2019	1310	Estimated	206	215.06	28
9/20/2019	1104	Actual	0	0	31
8/20/2019	1104	Estimated	0	0	28

7/23/2019 (Record from 5/21/2019)	1104	Actual	7	7.28	63
			8151	8537.81	365

Usage History vs. Average Temperature
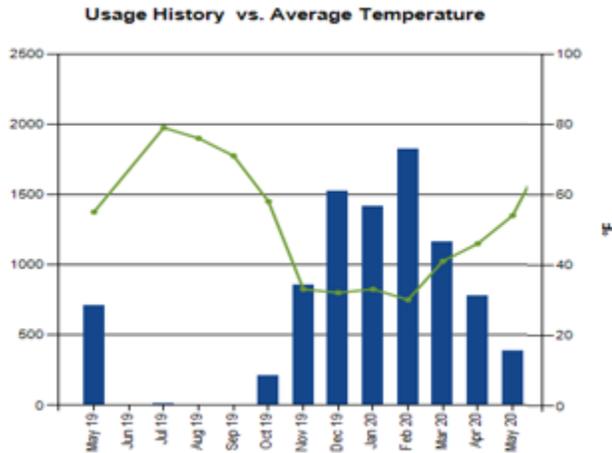
With regards to total usage, the data for May 21, 2019 – May 20, 2020 shows that Ace Computers utilized 8537.81 Therms of Natural Gas, which reflects total Greenhouse gases of **45.25** Metric Tons as CO2 by the following equation: 0.1 mmbtu/1 therm × 14.46 kg C/mmbtu × 44 kg CO_2/12 kg C × 1 metric ton/1,000 kg = **0.0053 metric tons CO_2/therm; 0.0053 x 8537.81 Therms = 45.25 Metric Tons (as CO2) for 5/2019-**

Transportation

Direct transportation impact is computed by a combination of trucking, company vehicles and business travel by company employees. The number of company vehicles driven and actual mileage driven and as gallons of fuel was not tracked, an average MPG figure was used to determine total gallons of fuel. US EPA's equation is: 8,887 grams of CO2/gallon of gasoline = 8.887×10^{-3} metric tons CO2/gallon of gasoline. Likewise, the equation for Diesel is 10,180 grams of CO2/gallon of diesel = 10.180×10^{-3} metric tons CO2/gallon of diesel.

Company Owned Vehicles

For the 5/19-5/20 period, the amount of company owned vehicles that used gasoline (1) were used for 10,684 miles. The amount of vehicles that used diesel (2) were used for 14,774 miles. Assuming the one minivan that uses gasoline is a 20 mpg vehicle and the 2 diesel vehicles (2 Sprinter Vans – one was purchased to replace the other) are 18 mpg vehicle, the total gallons of gasoline and diesel are 534 and 593 respectively.

For the gasoline vehicle, 534 x 8.887 x 10^{-3} = 4.738 Metric tons.

For the diesel vehicle, 593 x 10.180 x 10^{-3} =   6.042 Metric tons.

10.780 Metric Tons of CO_2

Scope 1 total is 45.25 + 10.78 = 56.03 Metric Tons

Scope 2

Emissions – Electricity Usage

With regards to electricity usage, we have gathered a number of charts which can tell a story about how the electricity is being utilized.

| Reading Date	Electricity Usage (kWh)
6/21/2019 0:00	17742.4
7/21/2019 0:00	23620.82
8/21/2019 0:00	22675.33
9/21/2019 0:00	18824.32
10/21/2019 0:00	17766.19
11/21/2019 0:00	18028.38
12/21/2019 0:00	22718.57
1/21/2020 0:00	25336.93
2/21/2020 0:00	25358.61
3/21/2020 0:00	24496.55
4/21/2020 0:00	20910.25
5/21/2020 0:00	16390.18
	253,868.53

Raw usage was 253,868.53 kWH from May 2019 – May 2020. This translates into **7.07×10^{-4} metric tons CO_2/kWh x 253,868.53 = 179.49 Metric Tons (as CO2)** for the period of this study.

Operating Schedule ⊘

Fuel Type | Electricity Demand (kW) ▾ | ☰

14.6 kW

ComEd
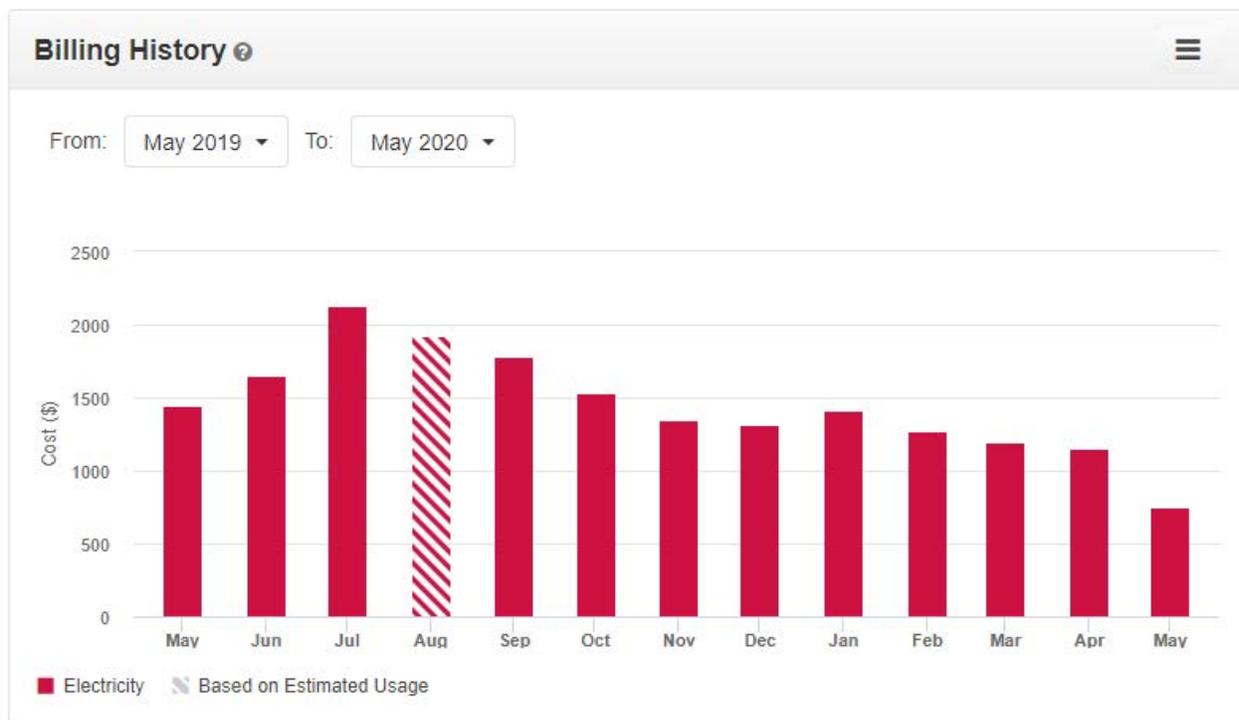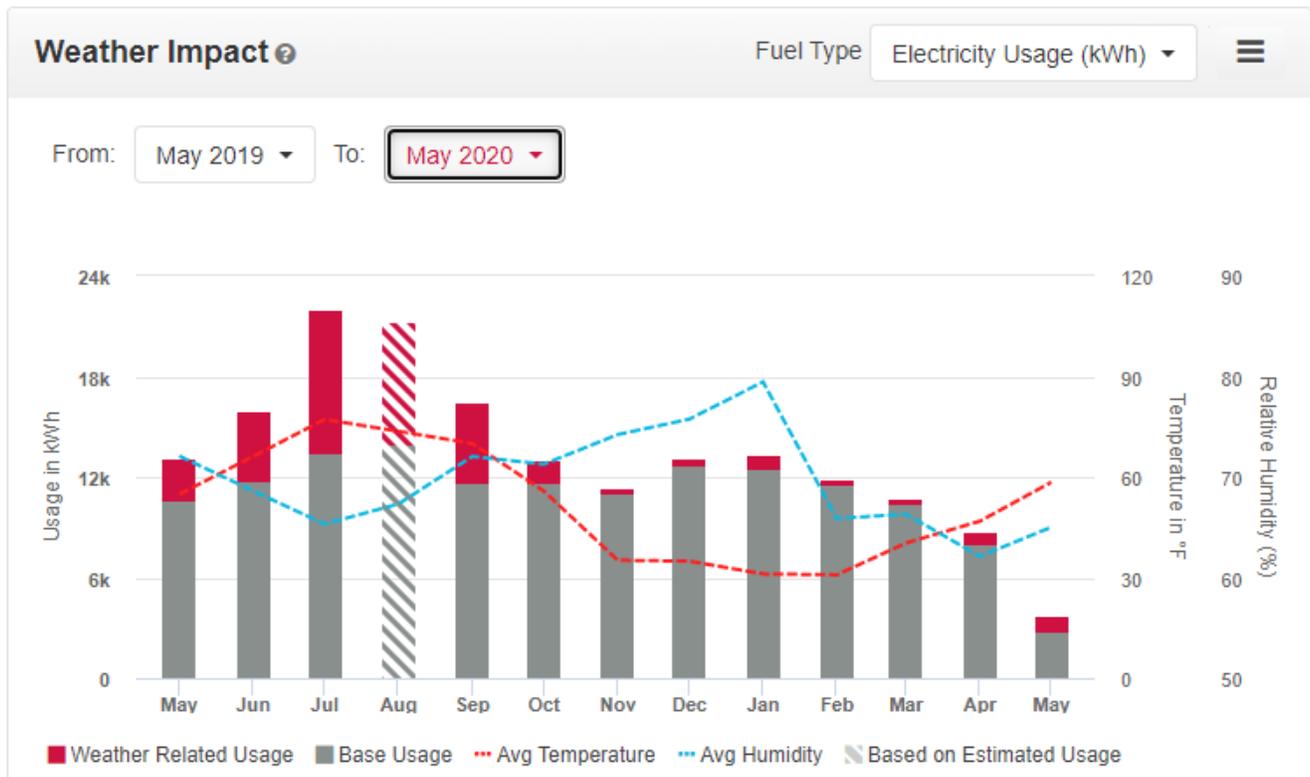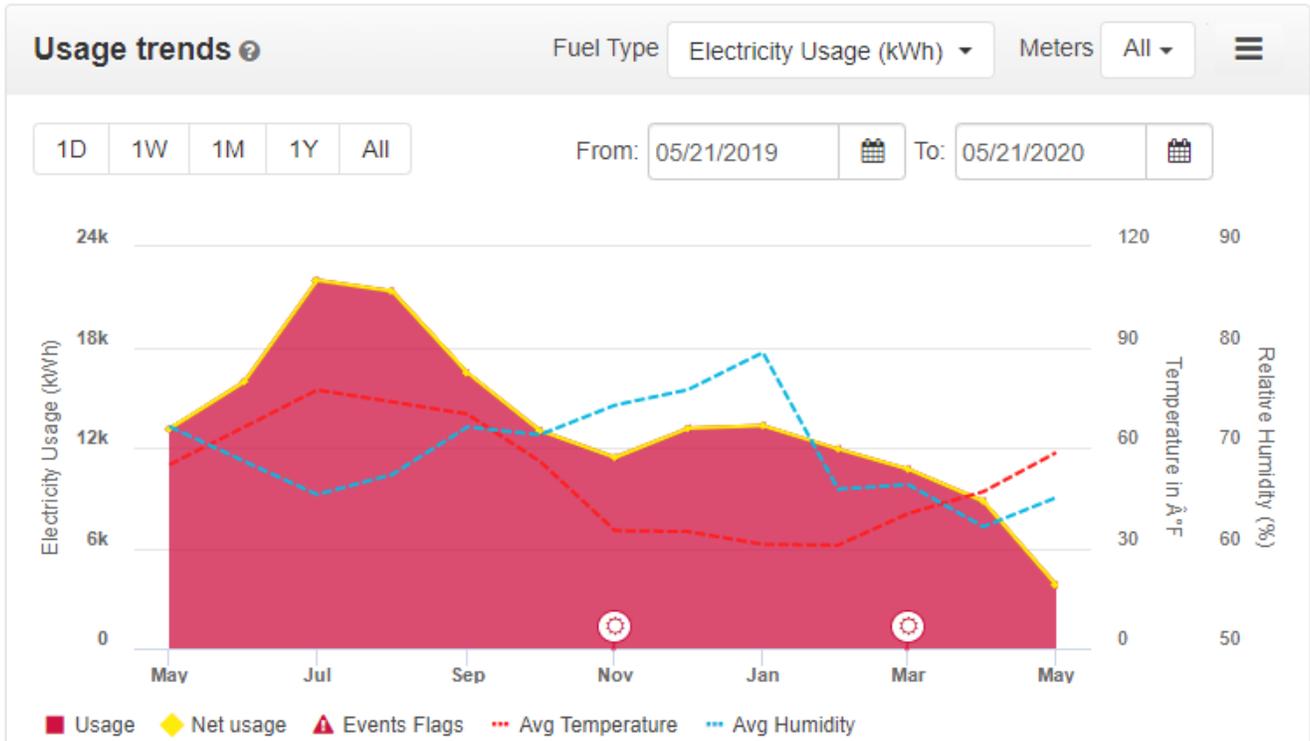
Annual Demand Intensity - Electricity

See energy usage for each interval throughout the year to visualize your building's profile. Determine if the profile aligns with expectations or requires further investigation. Heating/cooling degree days (HDD/CDD) help correlate the pattern with temperature.
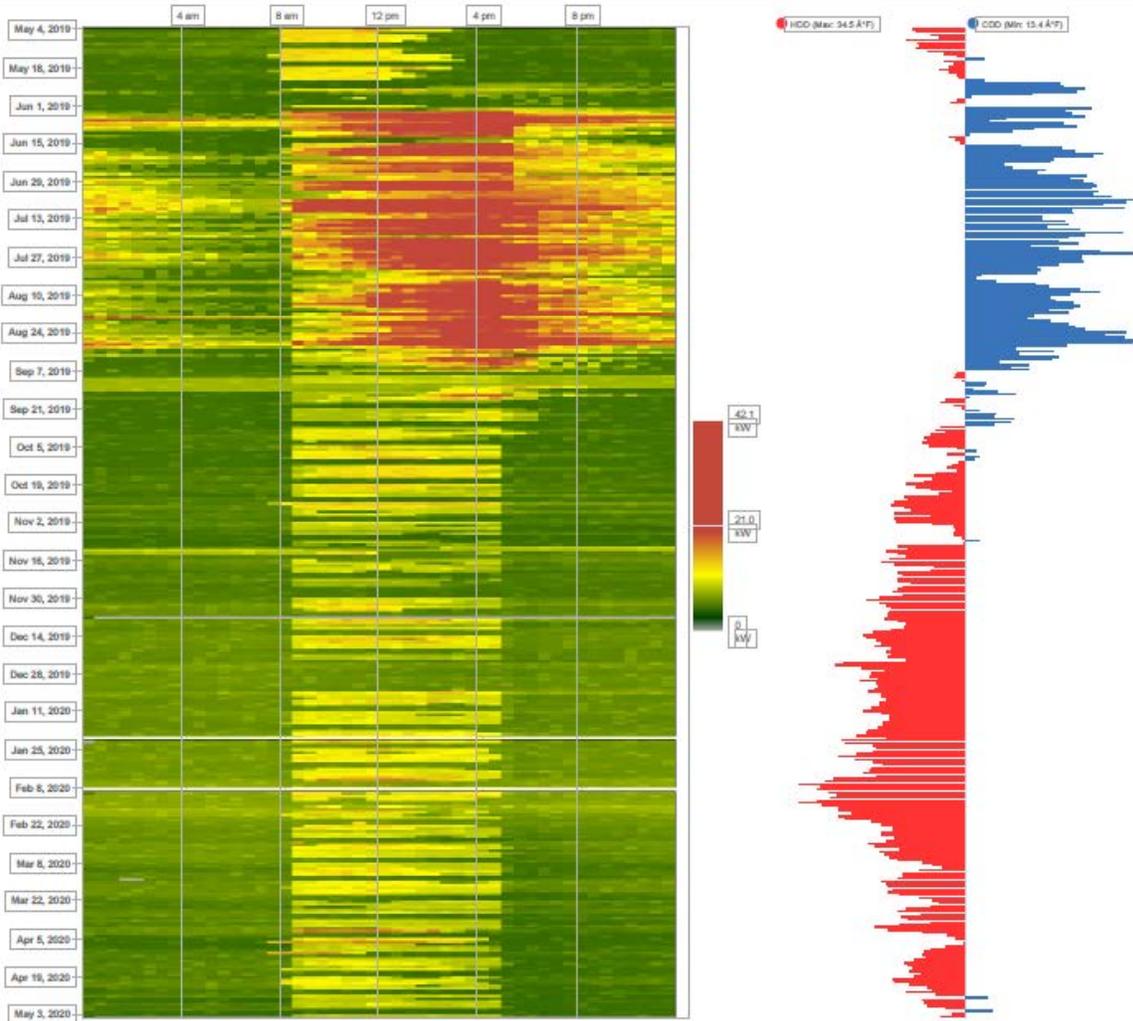
What Affects My Energy Usage?
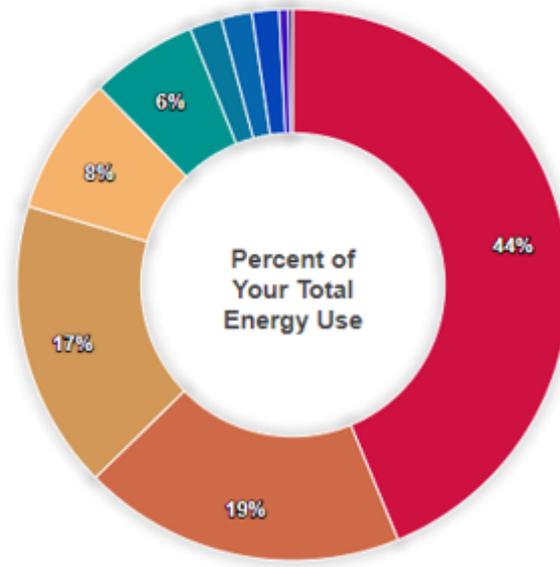
End Use	Usage (kWh)	You (kWh / sq ft)	Similar Facilities (kWh / sq ft)	Efficient Facilities (kWh / sq ft)
⬛ Lighting	28,449	3.09	1.22	0.41
⬛ Ventilation	12,431	1.35	2.2	0.7
⬛ Space Cooling	10,919	1.19	0.71	0.1
⬛ Computing	5,311	0.58	1.56	0.4
⬛ Other and Process Loads	4,112	0.45	1.21	0.31
⬛ Space Heating	1,217	0.13	0	0
⬛ Office Equipment	1,199	0.13	0.35	0.09
⬛ Refrigeration	1,028	0.11	0.3	0.08
⬛ Cooking	343	0.04	0.1	0.03
⬛ Water Heating	171	0.02	0.05	0.01

Based on the information you have provided, your Office is 20,989 sq ft in size and located in ELK GROVE VILLAGE, IL. Here is how its consumption compares to similar Facilities over the past 12 months. To update this information, please update your Facility Profile

Load Duration Curve
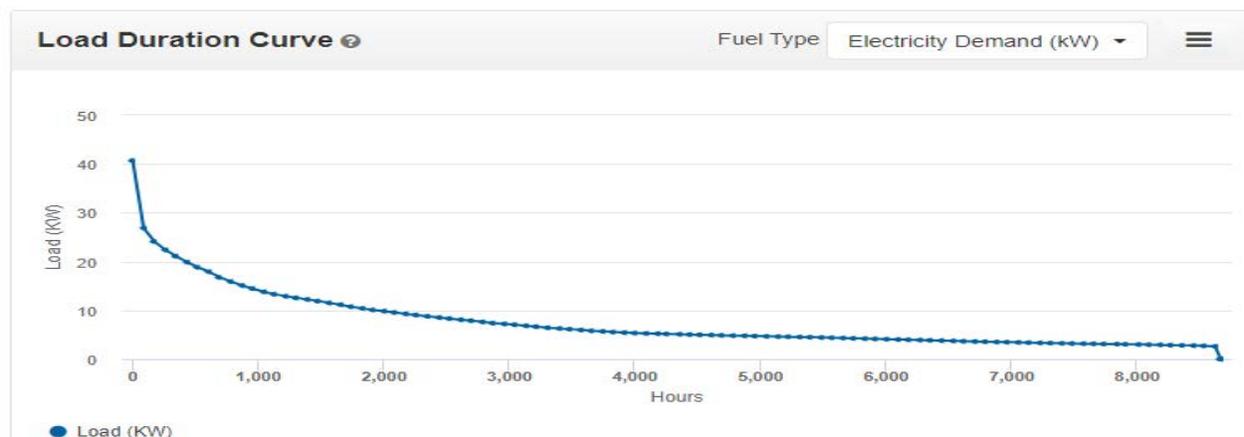
Scope 2 total is 179.49 Metric Tons

Scope 3

Trucking Firms – Estimate based on our shipments

The other figure is reported by our trucking firms, based on the number of shipments with an average distance covered per shipment plus UPS/FEDEX with an average daily figure added in. This figure is estimated at a total of **306.782 Metric Tons**. (Actual number of shipments is voluminous and we have not printed them here)

Business Travel – Car Rental

As recommended by ICF in their GHG report rebuttal for 2020 on Revision 1 of this report, we tracked our business travel and have a grand total of our personnel by actual mileage flown and estimated non-commuting mileage for sales calls plus car rentals. We had an estimated 4650 miles driven on car rentals (average 75 miles per day).

CAR RTL	DAYS	EMPLOYEE	MILES
2-Jun	3	JS	225
16-Jun	5	HM	375
29-Jul	7	JS	525
10-Aug	7	JS	525
13-Aug	2	JS	150
23-Aug	6	JS	450
24-Aug	5	JA	375

CAR RTL	DAYS	EMPLOYEE	MILES
16-Nov	6	JS	450
1-Jan	9	JS	675
3-Feb	2	JS	150
3-Feb	4	DB	300
10-Feb	2	JS	150
27-Feb	1	DA	75
8-Mar	3	JS	225

Based on the 4650 miles driven, using a 22.5 MPG rental car, that is about 207 gallons of gasoline. Using the formula above, that makes a total of **1.840** metric tons of CO_2.

Business Travel – Air Travel

As recommended by ICF on Revision 1 of this report for 2020, we tracked all our airline travel from records and have produced an entire listing of all business travel done over the May 21,2019 – May 20,2020 period. A chart showing this travel is shown below:

DATE	EMPLOYEE	TRIP MADE	MILEAGE	DATE	EMPLOYEE	TRIP MADE	MILEAGE
25-May	XX	ORD-TPE-ORD	14880	16-Nov	XX	ORD-DEN-ORD	1770
25-May	XX	EWR-TPE-EWR	15560	16-Nov	XX	MSP-DEN-MSP	1358
25-May	XX	EWR-TPE-EWR	15560	16-Nov	XX	EWR-DEN-EWR	3200
25-May	XX	ORD-TPE-ORD	14880	18-Nov	XX	MDW-DEN-MDW	1786
4-Jun	XX	ORD-MYR-ORD	1504	2-Jan	XX	ORD-LAS-ORD	3020
4-Jun	XX	ORD-MYR-ORD	1504	2-Jan	XX	ORD-LAS-ORD	3020
16-Jun	XX	DEN-SAT-DEN	1590	2-Jan	XX	ORD-LAS-ORD	3020
28-Jun	XX	ORD-SIN-ORD	18700	2-Jan	XX	ORD-LAS-ORD	3020
29-Jul	XX	ORD-LAX-ORD	3480	2-Jan	XX	MSP-LAS-MSP	2600
29-Jul	XX	EWR-LAX-EWR	4560	2-Jan	XX	MSP-LAS-MSP	2600
29-Jul	XX	IAD-LAX-IAD	4900	2-Jan	XX	PHX-LAS-PHX	510
10-Aug	XX	ORD-DFW-ORD	1602	2-Jan	XX	EWR-LAS-EWR	4440
13-Aug	XX	MCO-CMH-MCO	1606	13-Jan	XX	ORD-SYR-ORD	1208
23-Aug	XX	ORD-ATL-ORD	1212	14-Jan	XX	IAD-EYW-IAD	2060
24-Aug	XX	ORD-ATL-ORD	1212	3-Feb	XX	ORD-BOI-ORD	2860
24-Aug	XX	ORD-ATL-ORD	1212	3-Feb	XX	MSP-AUS-MSP	2080
24-Aug	XX	MCO-ATL-MCO	808	3-Feb	XX	ORD-AUS-ORD	1944
24-Aug	XX	DEN-ATL-DEN	2400	10-Feb	XX	ORD-MSY-ORD	1676
24-Aug	XX	IAD-ATL-IAD	1070	11-Feb	XX	ORD-EWR-ORD	1434
24-Aug	XX	IAD-ATL-IAD	1070	27-Feb	XX	ORD-RSW-ORD	2240
24-Aug	XX	PHX-ATL-PHX	3160	8-Mar	XX	ORD-SAN-ORD	3440
10-Sep	XX	ORD-HKG-ORD	15540	8-Mar	XX	MSP-SAN-MSP	3060
13-Oct	XX	EWR-MIA-EWR	2180				
15-Oct	XX	IAD-SAT-IAD	1360			TOTAL	187436
16-Nov	XX	ORD-DEN-ORD	1770				
16-Nov	XX	ORD-DEN-ORD	1770				

Using the estimated factor of 125 gCO_2 /passenger KM as published by the UK Government and cited by ICF in their initial review of our 2020 report, using a combination of 144.6 for short haul flights and 108.6 for long haul flights for those seated in economy plus class which is utilized primarily by our firm. This figure also includes a small percentage of N_2O. We have computed our total as shown below:

125 gCO_2 x (187436 miles x 1.609344 KM/Mile) = 37706125g = **37.71** Metric Tons as CO_2 for air travel for the company. This is a very substantial total as it is more than 3X the total of our company owned vehicles. There were no air flights made after March 11, 2020, as the country was shut down for the COVID pandemic and virtually no business travel was conducted from March 19,2020 – May 21,2020. We expect that the travel will continue to be very low for the remainder of 2020 as many trade shows are shut down and cancelled for the year.

Scope 3 total is 306.782 + 1.840 + 37.71 = 346.33 Metric Tons

Grand Total of all Scope Emissions is 56.03 + 179.49 + 346.33 = 581.85 Metric Tons

Ozone-Depleting Emissions

Ace Computers has no ozone-depleting substances that are part of their manufacturing or business processes. We therefore have no routine emissions of these ozone-depleting substances. The only potential emissions of ODSs may be the leakage from refrigeration equipment that is inherent in their operation.

Waste by Type and Disposal Method

The following Table represents the amount of waste recycled at Ace Computers. The electronics component is a result of our hardware take back program where customers may return decommissioned product for proper recycled disposal.

Total weight of waste by type and disposal method:

2019 (Pounds) After May 21	Hazardous	Non-Hazardous	Total
Recycling Cardboard		14568	
Recycling Electronics		2874	
Landfill		8230	
2019 Total			29528
2020 (Pounds) (Through May 21)			
Recycling Cardboard		8124	
Recycling Electronics		2810	
Landfill		6897	
2020 Total (Through May 21)			17831
TOTAL FOR FY 2019			47359

Water Use

As stated earlier, all water use is for human uses (sanitation, washing, etc) and the total usage is shown in this chart below. For the period of this study, May 2019-May 2020, the total usage was ~ 60,000 gallons of water. We are unsure exactly of the surge of water use in February-March of 2020, but it is believed that the additional usage was for landscape use. Our typical usage is about 3500 gallons per month.
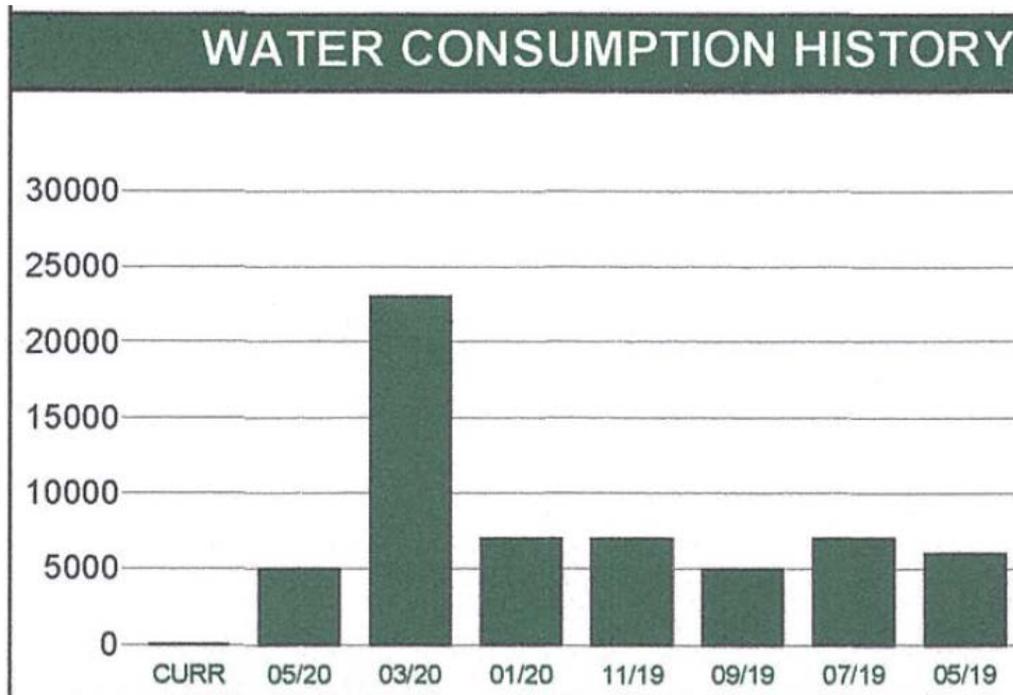
Analysis of Data

Ace Computers collects and analyses appropriate data to demonstrate the suitability and effectiveness of the Environmental Management System and to evaluate where continual improvement can be made.

Continual Improvement

Ace Computers is committed to continually improving the effectiveness of the environmental management system through the use of the environmental policy and environmental objectives, analysis of data, audit results, corrective and preventive actions and the management review.

Ace Computers does not currently track savings resulting from its environmental policies and leadership. We estimate that over the past three years that we have had our initiatives in place, annual savings from its waste management and its focus on pollution prevention have exceeded environmental expenses by an average of three to one.