



EA Engineering, Science,  
and Technology, Inc., PBC

# 2021

## CARBON FOOTPRINT REPORT



Issued August 2022

OPENNESS | PRUDENCE | BALANCE | CHALLENGE

## 2021 CARBON FOOTPRINT REPORT

### 1.0 ABOUT EA

Headquartered in Hunt Valley, Maryland, EA Engineering, Science, and Technology, Inc., PBC (EA) is a 100 percent (%) employee-owned, public benefit corporation (PBC) that provides environmental, compliance, natural resources, infrastructure engineering, and technology solutions to a wide range of public and private sector clients. In calendar year (CY) 2021, EA maintained a normalized headcount of 592 employees, based on full-time equivalents (FTEs)<sup>1</sup>, working across a network of 26 commercial offices in the United States (U.S.) including Alaska, Hawaii, and the territory of Guam.

First initiated in 2009, this is EA's tenth tabulation of greenhouse gas (GHG) emissions resulting from the company's operations and activities, and their associated carbon footprint. EA published Carbon Footprint Reports biennially from CY 2009 through CY 2015, with each report summarizing two full CYs. Beginning with CY 2016, EA transitioned to annual reporting as an industry best practice of transparency. This is EA's sixth annual report and represents EA's Carbon Footprint Report for CY 2021. Calculations in this report have been rounded to one significant digit.

***Simplified GHG Emissions Calculator***—In 2019, EA began utilization of the U.S. Environmental Protection Agency's (EPA's) Center for Corporate Climate Leadership Simplified GHG Emissions Calculator (SGEC)<sup>2</sup>. The SGEC is a spreadsheet-based, menu-driven tool for calculating GHG emissions. The tool is updated by EPA, as warranted, to improve utility and representativeness. For this assessment, EA employed Version 7, released in June 2021.

Changes to the tool in 2021 (as a result of Version 6 to Version 7 updates) that impact EA's carbon footprint calculations are discussed in ***Section 3.2*** (page 5).

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1. Calculations in this report that rely on personnel totals (e.g., solid waste and wastewater) are completed using a normalized FTE total of 592. Normalized FTE is calculated as EA's total Occupational Safety and Health Administration labor hours reported in 2020 divided by 2,080 (the number of hours in a typical full-time year assuming 52 standard 40-hour work weeks):  $1,231,888 \text{ hours} \div 2,080 \text{ hours per FTE} = 592 \text{ FTE}$ .
  2. <https://www.epa.gov/climateleadership/simplified-ghg-emissions-calculator>. EPA Center for Corporate Climate Leadership. Simplified GHG Gas Emissions Calculator. See also the companion guide: <https://www.epa.gov/climateleadership/guide-greenhouse-gas-management-small-business-low-emitters>.

## 2.0 GREENHOUSE GAS INVENTORY ASSESSMENT AND MANAGEMENT

### 2.1 Accounting Standards and Management Plan

This GHG analysis has been prepared in accordance with the GHG Protocol Corporate Accounting and Reporting Standard<sup>3</sup> (hereafter referred to as “the Standards”), developed and published by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI). These Standards are the most widely used international accounting tool for governments and businesses to identify, quantify, and manage GHG emissions. The Standards require accounting for the six “Kyoto Protocol” GHG emissions—carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFC), and perfluorocarbons (PFC)—which are reported in terms of carbon dioxide equivalents (CO<sub>2</sub>e). Other gases with global warming potential may be included; however, EA, as a professional services firm, does not use/generate them. This report accounts primarily for CO<sub>2</sub> emissions, which represent the majority of GHG emissions from most sources, but also includes CH<sub>4</sub> and N<sub>2</sub>O (which together with CO<sub>2</sub> are referred to as the “Big Three”).

As an aspect of continual improvement to further align with WRI and to ensure consistent analysis of data year to year, EA maintains a *Carbon Footprint Inventory Management Plan* (IMP). In conjunction with EA’s use of EPA’s SGEC to determine its carbon footprint, we use the Center for Corporate Climate Leadership’s Simplified Inventory Management Plan Form (August 2020 version) for EA’s IMP. The IMP details data collection procedures and quality control measures and identifies data and factors to be used to estimate GHG emissions associated with EA’s business operations. It summarizes EA’s operations, details data collected for each GHG scope area, quantifies emissions calculation methods utilized, and outlines data management methods and verification process controls calculations. The IMP is an internal “evergreen” document that is updated annually by EA’s Carbon Footprint Working Group, or more often as best practices dictate. The IMP is used to ensure annual GHG accounting and reporting are relevant, complete, consistent, transparent, and accurate.

### 2.2 Emissions Scopes

EA accounts for direct and indirect GHG emissions from its business operations in accordance with defined GHG scopes delineated in the Standards:

- **Scope 1: Direct GHG Emissions**—Direct GHG emissions from operations.
- **Scope 2: Electricity Indirect GHG Emissions**—Indirect GHG emissions from purchased energy generated elsewhere.
- **Scope 3: Other Indirect GHG Emissions**—Indirect GHG emissions from supply/delivery chain and other activities.

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3. World Business Council for Sustainable Development and World Resources Institute. 2004. *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. Revised Edition*. March. Available at: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.

**Scope 1** GHG emissions from EA’s business operations include emissions from fleet vehicle operations, boat operations, portable power generators, emissions associated with combustion of fuels used for heating offices and other buildings, and emissions of refrigerants from building cooling systems. Emissions from energy use in residential “satellite offices” (i.e., officially designated home offices used by EA employees who do not work from an established commercial office) and remote telework are not included in Scope 1.

**Scope 2** GHG emissions from EA’s business operations are limited to emissions from power generating stations supplying electric energy to EA’s offices and other buildings. Emissions arising from energy use in residential “satellite offices” and remote telework are not included in Scope 2.

**Scope 3** GHG emissions arise from other elements of EA’s business operations, and the following have always been included in the carbon footprint calculation:

- Employee commutes to and from EA commercial office locations, and employee business travel using personal vehicles
- Employee business travel, inclusive of air, rail, rental car, public transit, and rideshare services
- Emissions arising from disposal of solid wastes, including recycling and composting, generated at EA offices and other work locations (e.g., temporary field/project offices)
- Emissions arising from potable water consumption and wastewater treatment
- Emissions arising from shipment of samples, work products, and other materials to and from EA offices and to client/project sites
- Emissions associated with elements of the supply/delivery chain and other activities

In fulfillment of a continual improvement target, beginning with CY 2021, EA elected to extend its Scope 3 emissions assessment to include fully quantifying its value chain GHG emissions. In accordance with GHG Protocol’s *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*)<sup>4</sup> and the *List of Corrections for Scope 3 Standard*<sup>5</sup>, EA evaluated all 15 elements of the value chain, not otherwise included in Scope 1 and Scope 2 emissions, considered by WRI/WBCSD to represent a complete organization carbon footprint. Based on criteria outlined in the *Scope 3 Standard*, EA’s Carbon Footprint Working Group determined that categories 10, 11, 13, 14, and 15 do not apply to EA’s operations and have been omitted from EA’s value chain emissions calculations.

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4. World Business Council for Sustainable Development and World Resources Institute. 2011. *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. October. Available at: <https://ghgprotocol.org/standards/scope-3-standard#supporting-documents>.

5. World Business Council for Sustainable Development and World Resources Institute. 2013. *List of Corrections for Scope 3 Standard*. May. Available at: <https://ghgprotocol.org/standards/scope-3-standard#supporting-documents>.

Scope 3 emissions within value chains are comprised of eight upstream and seven downstream categories of GHG emissions, identified in **Table 1** (below) with examples of EA’s contributions to the category.

**Table 1. Scope 3 Supply Chain Categories and Representative Emissions Sources**

Scope 3 Category	Representative Emissions Sources
1 – Purchased Goods and Services	Vendors, service providers, and subcontractors
2 – Capital Goods	Lab and equipment; boats and generators; and information technology equipment (e.g., computers, printers, scanners, etc.)
3 – Fuel and Energy-Related Activities	Fuel, purchased electricity, and transmission/distribution emissions associated with upstream production and transportation. Fuel consumption is accounted for in EA’s Scope 1 emissions and purchased electricity is accounted for in Scope 2.
4 – Upstream Transportation/ Distribution	Transportation and distribution emissions associated with delivery of purchased goods and services.
5 – Waste Generated in Operations	Solid waste generated during day-to-day office and field operations; historically, accounted for in EA’s Scope 3 emissions calculations along with offsets associated with recycling and compost activities.
6 – Employee Business Travel	Previously accounted for in EA’s Scope 3 emissions calculations along with TerraPass carbon credits typically purchased to offset a component of EA’s annual employee business travel emissions.
7 – Employee Commuting	Historically, employee commutes have been incorporated into EA’s Scope 3 emissions calculations through comprehensive data obtained as part of a voluntary employee commuting survey. With an expanded hybrid workforce, EA will also incorporate Scope 3 emissions associated with remote/telework.
8 – Upstream Leased Assets	Life-cycle emissions associated with construction of leased assets such as commercial office space, including refrigerant production.
9 – Downstream Transportation/ Distribution	Limited to transportation and delivery of products sold (i.e., technical reports prepared for clients), which has been previously accounted for in Scope 3 emissions.
10 – Processing of Sold Products	Not applicable to EA’s operations.
11 – Use of Sold Products	Not applicable to EA’s operations.
12 – End-of-Life Treatment of Sold Products	Waste treatment and disposal of products such as technical reports produced in hard copy and/or electronic (e.g., compact disc or USB) format.
13 – Downstream Leased Assets	Not applicable to EA’s operations.
14 – Franchises	Not applicable to EA’s operations.
15 – Investments	Not applicable to EA’s operations.

## 3.0 2021 CARBON FOOTPRINT REPORTING

### 3.1 Reporting Overview

Under EPA’s Mandatory GHG Reporting Rule at 40 Code of Federal Regulations Part 98, most GHG sources are only required to report their emissions to EPA if they exceed 25,000 metric tons of carbon dioxide equivalents (MTCO<sub>2e</sub>) per year. Since 2009, EA has calculated and reported its GHG emissions (carbon footprint) by means of data collection to build the emissions estimate *from the bottom up*. Over the years prior to expansion of EA’s analysis of Scope 3 supply chain emissions, the company’s total gross GHG emissions (i.e., excluding offsets) have consistently ranged between 4,000 and 5,000 MTCO<sub>2e</sub> resulting in EA being considered a minor GHG source. With inclusion of supply chain emissions, as discussed in **Section 2.2** (page 2) and **Table 1** (page 4), EA’s total gross GHG emissions are anticipated to increase to between 9,000 and 11,000 MTCO<sub>2e</sub> annually (with employee headcount and scope of business held constant)—well under the 25,000 MTCO<sub>2e</sub> limit for consideration as a minor GHG source.

This report is intended to provide an accurate assessment of EA’s operations as a company and their associated carbon footprint. To achieve this objective, this report incorporates verified data for EA’s corporate headquarters location (Hunt Valley, Maryland), which represents approximately 30% of leased commercial office space, as well as office-specific data from the majority of the remainder of EA’s nationwide commercial offices. Where office-specific data were not available, data were extrapolated using the remaining data set. Prior to 2016, assessments of company-wide emissions were reliant on extrapolating data from EA’s leased headquarters space as well as regional energy use intensity and related factors. Since that time, reports build on the practice of collecting and incorporating verified data from additional EA commercial offices, when and where office-specific data are available.

### 3.2 Changes in SGEC Reporting Tool

As previously noted, EA has analyzed its carbon footprint since 2009, and resultant gross GHG emissions remained fairly consistent as measured in total and on a *per employee* basis. In 2019, after confirming data comparability using overall emissions calculations, EA transitioned to the use of EPA’s SGEC to determine its carbon footprint.

The principal differences between EA’s previous calculations (2018 and earlier) and the SGEC tool included:

- Accounting for GHG emissions from commercial refrigerant (HFC) losses, which had not previously been included in EA’s calculations
- Accounting for GHG emissions from water, wastewater, and solid waste, which are not included in the SGEC tool

As the SGEC tool is periodically updated by EPA, solid waste was incorporated in Version 7 released in July 2021. Previous versions of the SGEC tool did not include calculations related to emissions associated with solid waste or associated recycling and composting offsets. Instead,

EA added those calculations as a customized tab 1 and estimated contributions using emissions factors from EPA's Waste Reduction Model (WARM)<sup>6</sup>. Version 7 of the SGEC tool incorporated calculations for solid waste, recycling, and composting as separate waste streams while applying lower emissions factors for recycling and composting (compared to landfilled and combusted waste) to generate a single overall line item for solid waste-related emissions. As a result, EA's carbon footprint no longer includes a line item dedicated to offsets associated with recycling and composting.

EA's emissions from water and wastewater, which together contribute less than 0.5% of the total GHG emissions, will continue to be incorporated as a customized entry in the SGEC tool.

*Appendix A* provides the full Emissions Summary using EPA's Center for Corporate Climate Leadership SGEC.

### 3.3 The Impact of the COVID-19 Pandemic on EA's 2021 Carbon Footprint

From the outset of the global Novel Coronavirus Disease 2019 (COVID-19) pandemic in early 2020, EA's workforce was considered "essential" providing critical services to federal, state, municipal government agencies, as well as private sector clients in such diverse industries as chemical and specialty gas manufacturing, electric power generation, food production, and healthcare. As such, EA's operations remained fully operational/at capacity throughout CY 2020 and CY 2021. That said, from mid-March through June 2020, the majority of EA's workforce transitioned to a 100% remote setting to comply with individual state and local safety directives. For the balance of CY 2020 and all of CY 2021, the majority of employees continued to operate in a hybrid environment, splitting time between home offices and/or project sites and EA commercial offices based on individual job functions and personal preference.

To be expected, EA's carbon footprint saw significant reductions in GHG emissions associated with Employee Commuting, Employee Business Travel, Natural Gas, and Purchased Electricity.

- Consistent with previous years, EA's *Employee Commuting* emissions were estimated based on voluntary feedback obtained through an annual employee survey. In addition to information on personnel's typical miles traveled roundtrip for their commutes and estimated fuel efficiency for personal vehicles, the 2020 survey (completed in May 2021) requested information on the number of days employees were working from home versus continuing to commute to their designated EA office. These data allowed EA's Carbon Footprint Work Group to assess Employee Commuting emissions taking into consideration the hybrid work environment sustained by the majority of EA's workforce after state and local safety directives were lifted nationwide.
- Commencing in mid-March 2020, all non-essential *Employee Business Travel* (e.g., vendor meetings, outside training, industry conferences, etc.) was prohibited by EA. This prohibition extended through the end of the CY, resulting in a dramatic decrease in EA's 2020 GHG emissions associated with Employee Business Travel. While the prohibition

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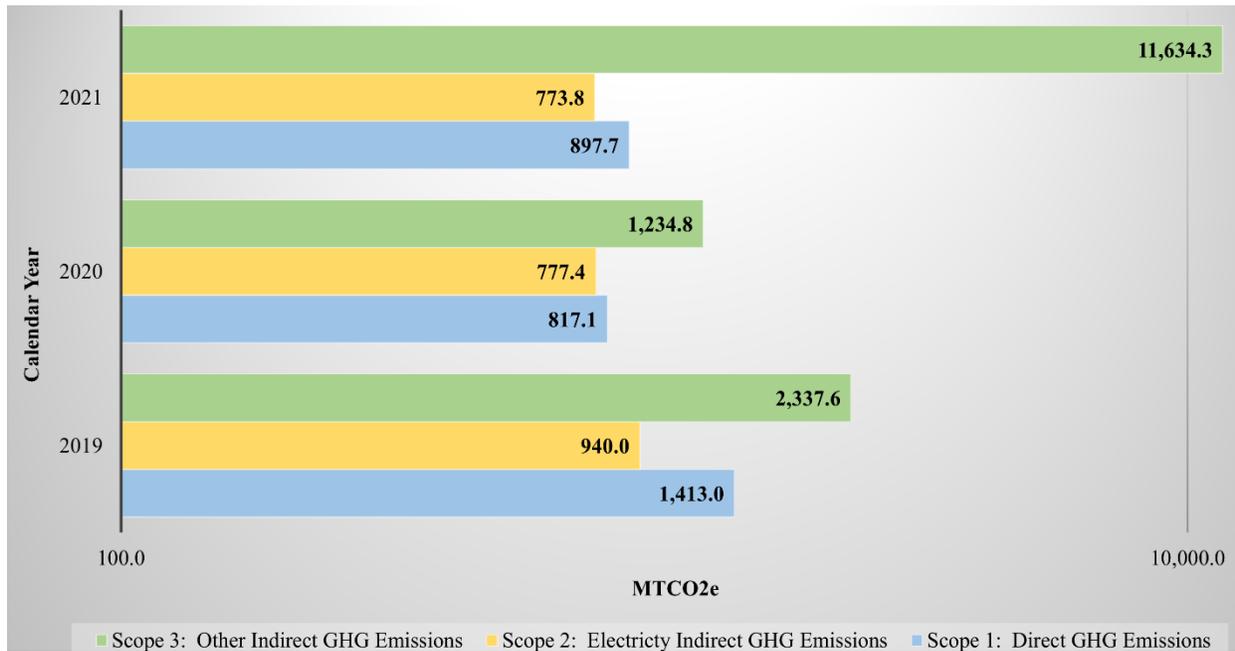
6. EPA WARM Tool, Version 15. May 2019. Available at: <https://www.epa.gov/warm/versions-waste-reduction-model-warm#15>.

was lifted by EA in June 2021, industry organizations, conference planners, and individual clients continued to limit travel and allowances for in-person meetings early in the year. As a result, Employee Business Travel emissions for 2021 remained below levels observed pre-pandemic, but saw upward movement as in-person conferences and meetings gradually returned later in the year.

- EA’s *Natural Gas and Purchased Electricity* emissions in 2021 continued to be below levels observed pre-pandemic due to ongoing decreased occupancy and use of EA’s nationwide leased office spaces as much of EA’s workforce continued to perform their duties in a hybrid work environment. Emissions are based on a combination of actual or estimated electricity usage, and Subregion Output Emissions Factors from EPA’s Emissions & Generation Resource Integrated Database (eGRID)<sup>7</sup>.

**Figure 1** provides a comparison of EA’s Scope 1, 2, and 3 emissions (represented as MTCO<sub>2e</sub>) for the past three CYs (2019–2021).

**Figure 1. Comparison of Total Emissions by Scope – Calendar Years 2019 through 2021**



7. Emissions & Generation Resource Integrated Database (eGRID). 2019. *eGRID 2019 Summary Tables 2019*. Available at: <https://www.epa.gov/egrid/egrid-2019-summary-tables>.

### 3.4 Carbon Offsets

Carbon offsets are reduction credits that can reduce net emissions through activities such as recycling, composting, etc. Offsets, as well as purchased credits such as Renewable Energy Certificate (RECs)<sup>8</sup>, are used to compensate for emissions generated by an organization. They do not account or take credit for emissions that were prevented as a result of limiting or eliminating a specific emissions-generating activity.

In 2021, EA offset approximately 1,026.3 MTCO<sub>2</sub>e through a combination of operational activities designed to sustainably mitigate GHG emissions as well as purchased RECs. EA's purchased offsets fall into two categories:

1. ***Air Travel Offsets***—EA purchased 150 metric tons of verified CO<sub>2</sub> offsets from TerraPass<sup>9</sup> to neutralize the impact of business air travel. All TerraPass carbon offsets, which support U.S.-based projects, have been verified by independent third parties and standards including the Gold Standard, Verified Carbon Standard, Climate Action Reserve, and American Carbon Registry.
2. ***RECs***—A REC is a tradable asset that represents the environmental attribute of 1 MWh of renewable electricity. RECs are sold separately from actual power generated to consumers who want to invest in responsible renewable energy projects. To offset 2021's Scope 2 emissions, EA covered 2,500 MWh, or 2,500,000 kilowatt-hours (kWh), of traditional (i.e., non-renewable) electricity consumption with Midwest Renewable Energy Tracking System<sup>10</sup> (M-RETS<sup>®</sup>) RECs from Carbon Solutions Group (CSG)<sup>11</sup>. M-RETS<sup>®</sup> tracks renewable energy generation from non-legacy hydropower projects and assists in verifying compliance with mandatory or voluntary state Renewable Portfolio Standards and objectives.

Copies of EA's 2021 offset certificates for purchased offsets are provided in ***Appendix B***.

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8. RECs are tradable assets that represent the environmental attributes of 1 megawatt hour (MWh) of renewable electricity. RECs are sold separately from actual power generated to consumers who want to "green" their existing power sources by contributing to the use of renewable energy sources.

9. <https://www.terrapass.com/>.

10. <https://www.mrets.org/>.

11. <https://www.carbonsolutionsgroup.com/>.

#### 4.0 SUMMARY OF EA'S 2021 CARBON FOOTPRINT

In CY 2021, with the expansion of Scope 3 value chain emissions described in **Table 1** (page 4), EA's total operational carbon footprint has been estimated at a gross total of 11,634.3 MTCO<sub>2e</sub> of GHG emissions from its operations. Approximately 8.8% (1,026.3 MTCO<sub>2e</sub>) of these emissions was offset, resulting in net GHG emissions from operations of 10,608.0 MTCO<sub>2e</sub> (**Appendix A**). The addition of expanded Scope 3 emissions reporting illustrates that approximately 85.6% of EA's gross carbon footprint is resultant of Scope 3 sources—consistent with industry research<sup>12</sup>, which suggests total Scope 3 emissions can represent between 65% and 95% of reporting companies' total GHG emissions.

In past years, EA's top emissions sources were driven by Employee Business Travel, Purchased Electricity, and Employee Commuting. In 2021, with the expansion of EA's carbon footprint evaluation to include analysis of total value chain inputs, the top three emissions sources were: Purchased Goods & Services (Scope 3, Category 1; 5,641.2 MTCO<sub>2e</sub>); Fuel & Energy Related Activities (Scope 3, Category 4; 2,021.0 MTCO<sub>2e</sub>); and Employee Commuting & Telework (Scope 3, Category 7; 831.3 MTCO<sub>2e</sub>).

**Table 2** summarizes EA's carbon footprint trends in MTCO<sub>2e</sub> and FTEs for the past 5 years.

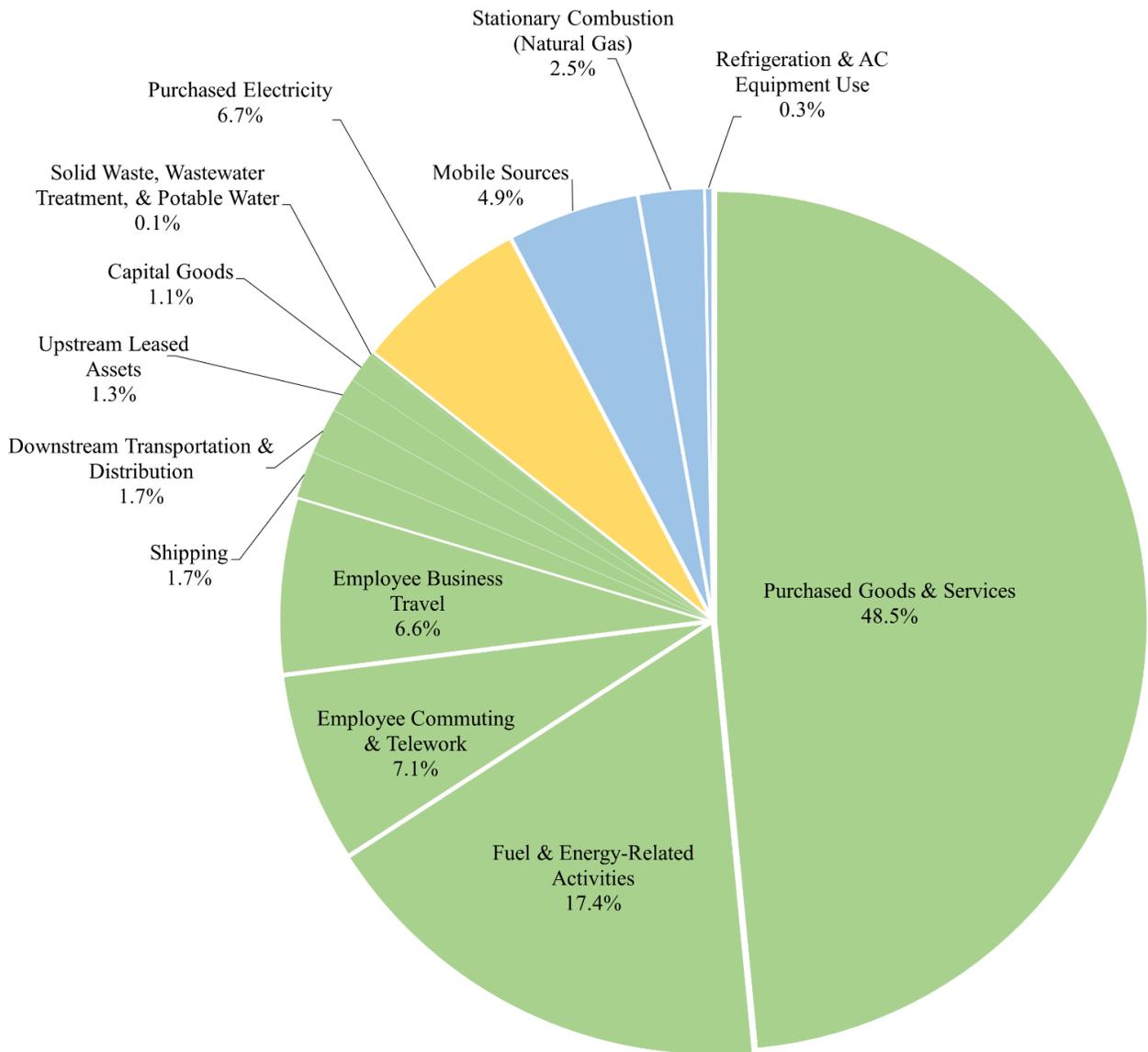
**Table 2. Carbon Footprint Trends for the Last 5 Years**

Calendar Year	2021	2020	2019	2018	2017
Total Gross Emissions*	11,634.3	2,829.3	4,690.6	4,379.6	4,483.0
Total Carbon Offsets*	-1,026.3	-1,241.0	-1,230.7	-1,252.4	-754.4
Total Net Emissions*	10,608.0	1,588.3	3,459.9	3,127.2	3,728.6
Number of FTE Employees	592	585	540	511	516
* Results reported in MTCO <sub>2e</sub> .					

**Figure 2** (next page) and **Table 3** (page 11) summarize the findings of EA's CY 2021 Carbon Footprint Report.

12. <https://www.cnbc.com/2021/08/18/apple-amazon-exxon-and-the-toughest-carbon-emissions-to-capture.html>.

**Figure 2. Emission Sources Expressed by Percentage of Total 2021 Carbon Footprint**



*Note: Emissions categories that account for approximately 0.1% of EA's total emissions are not included above. These categories are Fire Suppression/Purchased Gases (Scope 1) and End-of-Life Treatment of Sold Products (Scope 3).*

- Scope 1: Direct GHG Emissions
- Scope 2: Electricity Indirect GHG Emissions
- Scope 3: Other Indirect GHG Emissions

**Table 3. Summary of Emissions and Offsets Contributing to EA’s 2021 Carbon Footprint**

Emissions Sources	2021 MTCO <sub>2e</sub>	% of 2021 Total Footprint	2020 MTCO <sub>2e</sub>
<b>Scope 1: Direct GHG Emissions</b>			
Mobile Sources	575.6	5.0	546.3
Stationary Combustion (Natural Gas)	287.2	2.5	255.3
Refrigeration/Air Conditioning Equipment Use	34.9	0.3	15.5
Fire Suppression	0.0	0.0	0.0
Purchased Gases	0.0	0.0	0.0
<b>Scope 2: Electricity Indirect GHG Emissions</b>			
Purchased Electricity	773.8	6.8	777.4
<b>Scope 3: Other Indirect GHG Emissions</b>			
Purchased Goods and Services	5,641.2	49.3	NPI
Capital Goods	128.0	1.1	NPI
Employee Commuting and Telework <sup>(a)</sup>	831.3	7.3	572
Employee Business Travel <sup>(b)</sup>	771.0	6.7	514.3
Solid Waste Disposal	1.7	0.0	0.5
Shipping	201.1	1.8	139.8
End-of-Life Treatment of Sold Products	0.5	0.0	NPI
Potable Water	4.7	0.1	3.0
Product Transport	201.1	1.7	NPI
Upstream Leased Assets	152.9	1.3	NPI
Fuel and Energy-Related Activities	2,021.0	17.7	NPI
Wastewater Treatment	8.3	0.0	5.2
<b>Total Emissions (All Scopes)</b>	<b>11,634.3</b>	<b>100.0</b>	<b>2,829.3</b>
<b>Carbon Offsets<sup>(c)</sup></b>			
Air Travel Offsets (Purchased)	(150.0)		(150.0)
Renewable Energy Certificates (Purchased) <sup>***</sup>	(876.3)		(876.3)
<b>Total Reduction</b>	<b>(1,026.3)</b>	<b>(8.8)</b>	<b>(1,026.3)</b>
<b>NET EMISSIONS<sup>(d)</sup></b>	<b>10,608.0</b>		<b>1,588.3</b>
Notes:			
(a) 2021 emissions determinations include the addition of emissions associated with telework which was not previously accounted for in EA’s emissions calculations.			
(b) Air, rail, and rental car travel data provided by EA’s corporate travel agent, Safe Harbors.			
(c) Offsets result in a decrease in net emissions and are denoted by parentheses. Net emissions represent the sum of EA’s Scope 1, 2, and 3 emissions less earned/purchased offsets.			
(d) 1 REC = 1 MWh = 1,000 kWh. EA used approximately 2,194.98 MWh of purchased electricity in 2021. Based on EPA e-GRID regional factors, the SGEC estimates that 0.351 MTCO <sub>2e</sub> are emitted for each 1 MWh used, for an aggregate Scope 2: Purchased Electricity emissions total of 773.9 MTCO <sub>2e</sub> in 2021. EA purchases RECs in advance of calculating the company’s carbon footprint for the year by estimating RECs needed based on the previous year’s data. Based on 2020 electrical energy use (2,139.8 MWh), EA purchased 2,500 MWh (2,500,000 kWh) of RECs in 2021, resulting in carbon offsets for 876.3 MTCO <sub>2e</sub> , offsetting 113.2% of EA’s Scope 2 emissions.			
NPI <i>Not Previously Incorporated</i> ; NPI represents a Scope 3 supply chain emissions category not previously evaluated as part of EA’s overall carbon footprint.			



## Appendix A

### Center for Corporate Climate Leadership Simplified Greenhouse Gas Emissions Calculator – Emissions Summary

## Emissions Summary

### Guidance

The total GHG emissions from each source category are provided below. You may also use this summary sheet to fill out the *Annual GHG Inventory Summary and Goal Tracking Form* as this calculator only quantifies one year of emissions at a time.

<https://www.epa.gov/climateleadership/center-corporate-climate-leadership-annual-ghg-inventory-summary-and-goal-tracking>

By entering the data below into the appropriate cell of the *Annual GHG Inventory Summary and Goal Tracking Form*, you will be able to compare multiple years of data.

If you have multiple Calculator files covering sub-sets of your inventory for a particular reporting period, sum each of the emission categories (e.g. Stationary Combustion) to an organizational total, which then can be entered into the *Annual GHG Inventory Summary and Goal Tracking Form*.

(A) Enter organization information into the orange cells. Other cells on this sheet will be automatically calculated from the data entered in the sheets in this workbook. Blue cells indicate required emission sources if applicable. Green cells indicate scope 3 emission sources and offsets, which organizations may optionally include in their inventory.

(B) The "Go To Sheet" buttons can be used to navigate to the data entry sheets.

### Organizational Information:

Organization Name:	EA Engineering, Science, and Technology, Inc., PBC		
Organization Address:	225 Schilling Circle, Suite 400 Hunt Valley, MD 21031		
Inventory Reporting Period:	Calendar Year 2021		
	Start:	1/1/2021	End: 12/31/2021
Name of Preparer:	Carbon Footprint Team (Lead: John Kumm, PE, BCEE, CC-P)		
Phone Number of Preparer:	410-584-7000		
Date Prepared:	Jul-22		

### Summary of Organization's Emissions:

#### Scope 1 Emissions

Go To Sheet	Stationary Combustion	287.2	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Mobile Sources	575.6	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Refrigeration / AC Equipment Use	35.0	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Fire Suppression	0.0	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Purchased Gases	0.0	CO <sub>2</sub> -e (metric tons)

#### Location-Based Scope 2 Emissions

Go To Sheet	Purchased and Consumed Electricity	769.4	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Purchased and Consumed Steam	4.5	CO <sub>2</sub> -e (metric tons)

#### Market-Based Scope 2 Emissions

Go To Sheet	Purchased and Consumed Electricity	769.4	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Purchased and Consumed Steam	4.5	CO <sub>2</sub> -e (metric tons)

#### Total organization Emissions

Total Scope 1 & Location-Based Scope 2	1,671.6	CO <sub>2</sub> -e (metric tons)
Total Scope 1 & Market-Based Scope 2	1,671.6	CO <sub>2</sub> -e (metric tons)

**Reductions**

Go To Sheet	Offsets	1,026.3	CO <sub>2</sub> -e (metric tons)
	Net Scope 1 and 2 Location-Based Emissions	645.4	CO <sub>2</sub> -e (metric tons)
	Net Scope 1 and 2 Market-Based Emissions	645.4	CO <sub>2</sub> -e (metric tons)

**Scope 3 Emissions**

Go To Sheet	Business Travel	771.0	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Employee Commuting	605.7	CO <sub>2</sub> -e (metric tons)
	Employee Commuting - Home Office Emissions	225.6	
	Upstream Leased Assets	152.9	
	Shipping	201.1	
Go To Sheet	Waste	1.7	CO <sub>2</sub> -e (metric tons)
	Downstream Transportation and Distribution	201.1	
	Potable Water	4.8	
	Wastewater Treatment	8.3	
	Fuel & Energy Related Activities (Upstream Fuel Production)	2,021.0	
	End-of Life-Treatment of Sold Products (Paper Products)	0.5	
	Capital Goods	128.0	
	Purchased Goods and Services	5,641.2	CO <sub>2</sub> -e (metric tons)

**Required Supplemental Information**

Go To Sheet	Biomass CO <sub>2</sub> Emissions from Stationary Sources	0.00	CO <sub>2</sub> -e (metric tons)
Go To Sheet	Biomass CO <sub>2</sub> Emissions from Mobile Sources	0.00	CO <sub>2</sub> -e (metric tons)

<b>TOTAL</b>	11,634.3	CO <sub>2</sub> -e (metric tons)
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<b>NET EMISSIONS</b>	10,608.0	CO <sub>2</sub> -e (metric tons)
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## Appendix B

**Copies of 2021 Renewable Energy Credit Certificates and Carbon Offsets**



## Transaction Confirmation



Date: 01-18-2022

M-RETS Organization: Carbon Solutions Group

### Retiring 2500 active RECs

Account	ID	Project	Fuel Type	Vintage	Location	Quantity
CY20 Manitoba Hydro US Matched	4CF803E5-4247	Limestone - Limestone	Hydroelectric Water	2020-07-01	MB	2500

### Retirement reason:

Beneficial Ownership - For Environmental Benefit

### Retirement reason details:

Notes: EA Engineering, Science, and Technology, Inc., PBC 2021 Energy Year

### to this retirement account

Default

*M-RETS hereby declares this transaction confirmation shall serve as proof that the above transaction was completed.*

THIS CERTIFICATE OF SUSTAINABILITY IS PROUDLY PRESENTED TO  
**EA Engineering, Science, and Technology, Inc.,  
PBC**

**150 mT of Carbon Offsets from the  
Business Carbon Offset Package**



JJU70LHW-522423

*Certificate Number*

December 15, 2021

*Date*