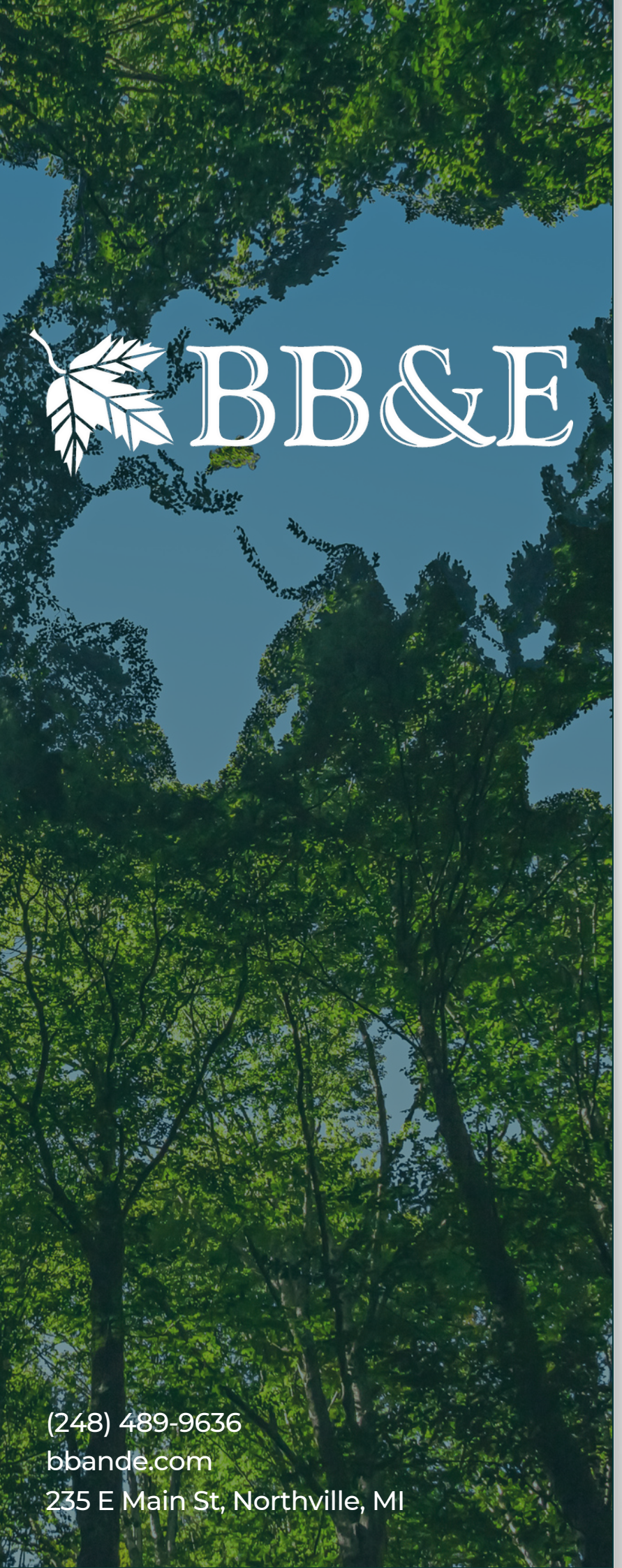

SCOPE 1 & SCOPE 2

GREENHOUSE GAS EMISSIONS REPORT

DECEMBER 2022

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INTRODUCTION AND ORGANIZATIONAL BOUNDARIES

BB&E Inc., Headquarters Office has prepared this Scope 1 and Scope 2 Greenhouse Gas (GHG) Emissions Report to document its GHG emissions. BB&E is a full-service consulting engineers and professionals company that serves Federal, Municipal, and Private Sector clients alike. BB&E has 300+ Team Members, many of which are located at Federal Facilities. As such Team Members located at Federal Facilities follow Federal Facility protocols related to GHG Emissions and initiatives.

BB&E Team Members not at Federal Facilities work either remotely or at one of its leased office spaces located in Northville, Michigan; Norcross, Georgia; or San Antonio, Texas. BB&E also has an office in Norfolk, Virginia. This office is leased and solely supports its contract with the Federal Government. The Norfolk office space is subject to renewal from year to year at the discretion of the Federal Government. As such, BB&E does not include this space in its inventory since data consistency cannot be guaranteed.

BB&E does not manufacture any product and as an office space low emitter, utilizes the USEPA's Simplified Guide to GHG Management for Organizations as a basis for its GHG Program.

SCOPE 1 EMISSIONS

Since BB&E owns no spaces and has no fleet vehicles, its Scope 1 GHG emissions occur from sources that are controlled by BB&E at its leased spaces. Examples include natural gas heaters used to heat leased space. BB&E utilizes natural gas bills provided by its utility to track its Scope 1 Emissions. BB&E's 2019, 2020, and 2021 Scope 1 Emissions are 7.6, 5.7, and 7.0 metric tons of CO_2 equivalents respectively based on USEPA's Emissions Calculator. The decrease in 2020 is likely due to COVID protocols and the slight rebound in 2021 is indictive of getting back to work. 2022 results were compiled based on utilization data and were found to be the equivalent of 7.4 metric tons of CO_2 based on the USEPA's Emissions Calculator.

SCOPE 2 EMISSIONS

BB&E's Scope 2 Emissions are indirect emissions from energy such as electricity consumed in its controlled equipment or operations but generated by another entity other than the BB&E such as

a utility provider. As such, BB&E's indirect emissions are the direct emissions of its utility provider that operates the power plant. BB&E utilizes electricity bills provided by its utility to track its Scope 2 Emissions. BB&E's 2019, 2020, and 2021 Scope 2 Emissions are 18.79, 17.14, and 17.96 metric tons of CO_2 equivalents respectively based on USEPA's Emissions Calculator. The decrease in 2020 is likely due to COVID protocols and the slight rebound in 2021 is indictive of getting back to work. 2022 results were compiled based on utilization data and were found to be the equivalent of 16.88 metric tons of CO_2 based on the USEPA's Emissions Calculator. This is the least amount since 2020 and likely reflects the efficiency of office energy upgrade projects.

SCOPE 3 EMISSIONS

Scope 3 indirect emissions are typically related activities of an organization but are not owned or controlled by the organization such as employee commuting. Organizations may choose to report these emissions sources. BB&E currently does not track Scope 3 Emissions.

BB&E SCOPE 1 AND SCOPE 2 UTILITIES

BB&E Headquarters has been tracking its Scope 1 and Scope 2 energy usage since 2014 but has included the most recent 2022 data in this report (**Table 1)**. The GHG Emissions Calculator spreadsheet has been included as an electronic attachment (**Appendix A**), and a link to download the USEPA's Emissions Calculator can be found here.

GHG Emissions Inventory Utility invoices issued to BB&E were obtained for the period of January 1, 2022 through December 31, 2022 (**Table 1**). Data from the last full year of data (2022) at the writing of this report is included in figures for trend analysis (**Figure 1**, **Figure 2**). Figure 1 shows a typical electricity usage curve where cooling dominates the usage during the cooling months of June to September. Conversely, the Scope 1 emissions trend shows the emissions are largely connected to periods of heating which are typically October through May or June in Michigan.

Table 1 – Summary of BB&E Utility Invoices

Month	Year	Scope 2 - Electricity (kWh)[1]	Cost	Scope 1 - Gas (CCF)[2]	Cost
January	2022	2156	$366.64	243	$216.61
February	2022	2280	$394.64	289	$254.83

March	2022	2120	$372.82	247	$232.24
April	2022	2120	$374.91	174	$177.10
May	2022	2320	$402.38	93	$111.45
June	2022	2480	$424.36	90	$25.78
July	2022	2920	$484.78	0	$15.00
August	2022	3440	$556.19	0	$15.00
September	2022	3240	$528.76	0	$15.00
October	2022	2320	$402.41	1	$17.13
November	2022	2160	$380.43	48	$75.77
December	2022	2200	$388.47	175	$225.14
Average		**2480 kWh**	**$423.07**	**113.3 CCF**	**$115.09**
Total		**29,756 kWh**	**$5076.79**	**1360 CCF**	**$1381.05**

Notes:

[1] : Electricity kWh and Cost were generated from DTE monthly billing statements
[2] : Natural Gas CCF and Cost were generated from Consumers Energy monthly billing statements
[3] : Due to the January 2022 DTE electricity usage page being missing from the billing statement, an average cost of $0.17 was derived from the next month and used to calculate the missing usage amount

Figure 1 – 2022 Scope 2 Utility Usage

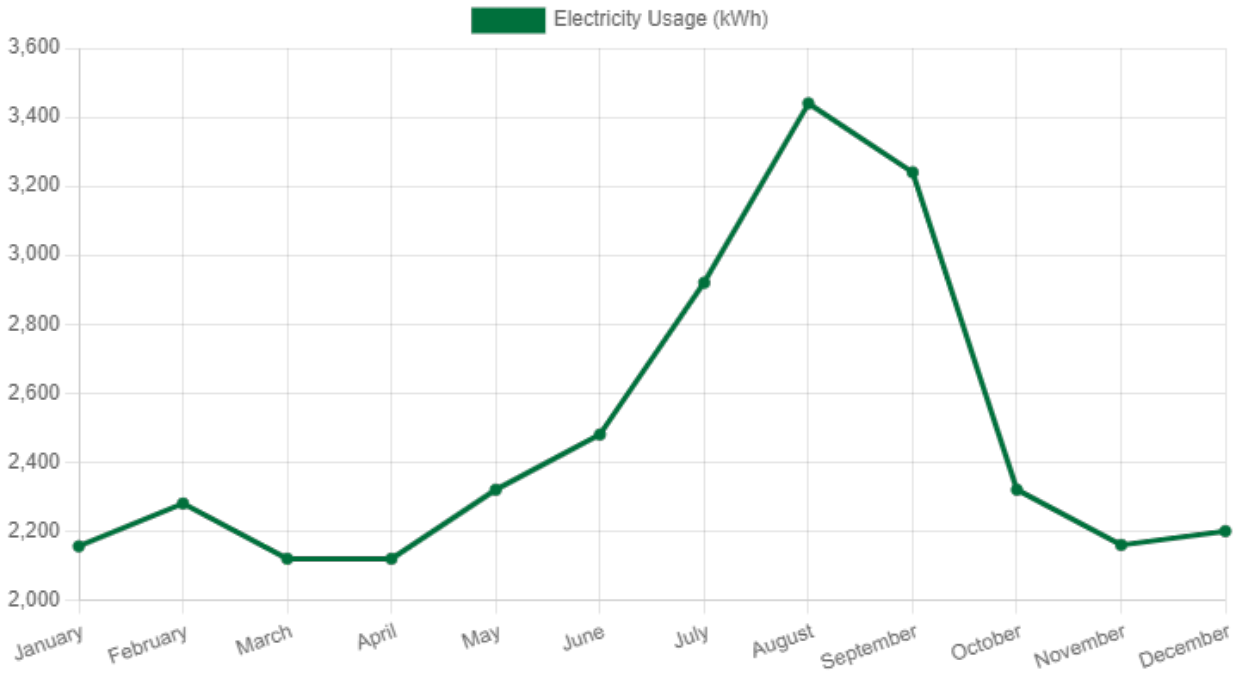
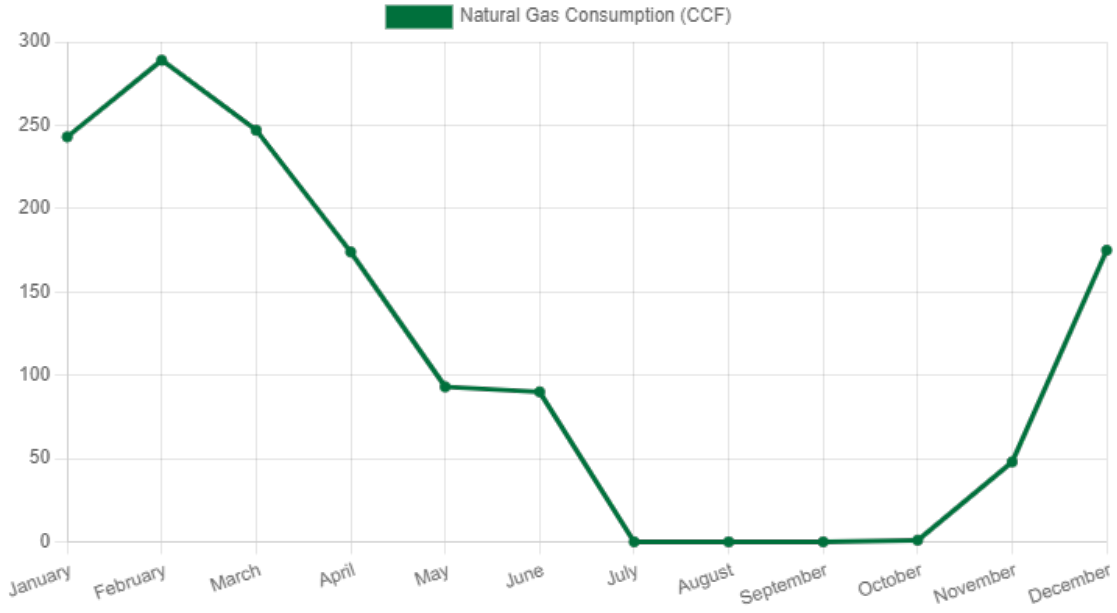


Figure 2 – 2022 Scope 1 Utility Usage



The primary energy consumed at BB&E is electricity. Cooling and lighting are likely the key contributors to electricity consumption. The secondary energy consumed at BB&E is natural gas. Heating is likely the key contributor to natural gas consumption. These usages will likely be tied to the amount of heating or cooling degree days in any given year.

To compare BB&E's energy use against the national average, annual gas and electricity usage was assessed by the Energy Use Index (EUI). During 2022, BB&E's EUI was 48.05 thousand British thermal units per square foot (kBtu/sf) and $1.29/sf. For a general comparison, an office with less than 10,000 square feet averages 63 kBtu/sf. Therefore, BB&E's energy use appears to be below the national average for similar operations.

GOALS

Energy Conservation Measures (ECMs) are types of projects or implemented technologies used to reduce the consumption of energy within a building. BB&E has implemented numerous ECMs to reduce energy consumption and decrease GHG emissions. BB&E currently has the following ECMs in place:

- Routine Level 1 Energy Assessments

- Programmable thermostats to control regularly occupied section of office (Offices, Main Workspace) and less occupied section of office (Copy Room, Storage Space, Large Conference Room)
- Replace Compact fluorescent lamps (CFLs) with LED where possible
- Keep metal halide high-bay lamps in the de-energized state
- Motion detectors in kitchen and copy room
- Lighting dimmer unit in Office 1
- Natural lighting
- Double pane windows
- Window blinds
- Power saving timers on copy machines and computers

BB&E has set the following goals for 2022 - 2023 to further reduce energy consumption and decrease GHG emissions:

- Identify an office leader
- Perform an in-house energy assessment
- Identify energy reduction opportunities and additional ECMs
- Educate all employees about energy/GHG reduction goals and opportunities
- Hold an office discussion regarding energy/GHG reduction goals and opportunities
- Create reduction plan and establish deadlines for achieving goals

APPENDIX A

CALCULATIONS

Heat Content | Help

Scope 1 Emissions from Stationary Combustion Sources

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Guidance

1. Example

- Select "Fuel Combusted" from drop down box.

column. If it's necessary to convert units, common heat contents can be found on the "Heat

for completeness. See the "Items to Note" section of the Help sheet for suggested estimation approaches.

(C) Biomass CO_2 emissions are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Stationary Source Fuel Combustion

Source ID	Source Description	Source Area (sq ft)	Fuel Combusted	Fuel State (solid, liquid, gas)	Quantity Combusted	Units
Northville	Office	5,000	Natural Gas	Gas	139	MMBtu

GHG Emissions

Total Organization-Wide Stationary Source Combustion by Fuel Type

Fuel Type	Quantity Combusted	Units
Gaseous Fuels		
Natural Gas	135,478	scf
Propane Gas	0	scf
Landfill Gas	0	scf
Biomass Fuels - Liquid		
Biodiesel (100%)	0	gallons
Ethanol (100%)	0	gallons
Vegetable Oil	0	gallons

Total Organization-Wide CO_2, CH_4 and N_2O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Gaseous Fuels			
Natural Gas	7,375.4	139.5	13.5
Propane Gas	0.0	0.0	0.0
Landfill Gas	0.0	0.0	0.0
Petroleum Products			
Distillate Fuel Oil No. 2	0.0	0.0	0.0
Residual Fuel Oil No. 6	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
Liquefied Petroleum Gases (LPG)	0.0	0.0	0.0
Total Fossil Fuel Emissions	**7,375.4**	**139.5**	**13.5**
Biomass Fuels - Solid			
Agricultural Byproducts	0.0	0.0	0.0
Peat	0.0	0.0	0.0
Solid Byproducts	0.0	0.0	0.0
Wood and Wood Residuals	0.0	0.0	0.0
Total Emissions for all Fuels	**7,375.4**	**139.5**	**13.5**

Total CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**7.4**

Guidance

CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

The Indirect Emissions from Purchased Electricity Guidance document provides guidance for quantifying two scope 2 emissions totals, using a **location-based method** and a **market-based method**. The organization should quantify and report both totals in its GHG inventory. The location-based method considers average emission factors for the electricity grids that provide electricity. The market-based method considers contractual arrangements under which the organization procures electricity from specific sources, such as renewable energy.

(A) Enter total annual electricity purchased in kWh and each eGRID subregion for each facility or site in ORANGE cells of **Table 1**.
See the "Items to Note" section of the Help sheet for suggested estimation approaches.
(C) Select "eGRID subregion" from drop box and enter "Electricity Purchased."
entering the location's zip code into EPA's Power Profiler:
https://www.epa.gov/egrid/power-profiler#/
emission factors are applicable, enter the factors in the yellow cells marked as "<enter factor>". If not, leave the

Help - Market-Based Method

Tips: Enter electricity usage by location and then look up the eGRID subregion for each location.
If you purchase renewable energy that is less than 100% of your site's electricity, see the

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

					Use these cells to enter applicable market-based emission factors						**Location-Based**		
					Emission Factors			**Emissions**			**Emissions**		
Source ID	**Source Description**	**Source Area (sq ft)**	**eGRID Subregion** *where electricity is consumed*	**Electricity Purchased (kWh)**	**CO_2 Emissions (lb/MWh)**	**CH_4 Emissions (lb/MWh)**	**N_2O Emissions (lb/MWh)**	**CO_2 Emissions (lb)**	**CH_4 Emissions (lb)**	**N_2O Emissions (lb)**	**CO_2 Emissions (lb)**	**CH_4 Emissions (lb)**	**N_2O Emissions (lb)**
Northville	*DTE Energy*	*5,000*	*RFCM (RFC Michigan)*	*29,756*	*0*	*0*	*0*	*0.0*	*0.0*	*0.0*	*36,126.8*	*3.4*	*0.5*