



SCOPE 1 & SCOPE 2
**GREENHOUSE GAS
EMISSIONS REPORT**

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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 serve 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.

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 7.7, 5.1, and 7.1 metric tons of CO₂ 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 indicative of getting back to work. 2022 results once compiled may show a new normal to target improvements.

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 a 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 13.4, 12.4, and 12.8 metric tons of CO₂ 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 indicative of getting back to work. 2022 results once compiled may show a new normal to target improvements.

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 (**Table 1**). The GHG Emissions Calculator spreadsheet has been included as an electronic attachment (**Appendix A**).

GHG Emissions Inventory Utility invoices issued to BB&E were obtained for the period of July 2014 through July 2022 (**Table 1**). Data from the last full year of data (2021) at the writing of this report is included in figures for trend analysis (**Figure 1, Figure 2**).

Table 1 – Summary of BB&E Utility Invoices

Month	Year	Scope 2 - Electricity (kWh)¹	Cost	Scope 1 - Gas (CCF)²	Cost
July	2014	2720	\$374.78	0	\$11.65
August	2014	2560	\$348.56	0	\$11.53
September	2014	2760	\$373.33	0	\$11.65
October	2014	1800	\$254.44	1	\$13.13
November	2014	1600	\$213.62	48	\$51.02
December	2014	1800	\$254.44	180	\$155.41
January	2015	2080	\$276.54	212	\$179.08
February	2015	2400	\$314.14	303	\$252.10
March	2015	2200	\$290.64	331	\$269.89
April	2015	2040	\$271.83	98	\$74.48
May	2015	1960	\$262.43	52	\$44.81
June	2015	2880	\$370.53	0	\$12.50
July	2015	1260	\$336.13	0	\$12.70
August	2015	2880	\$388.40	0	\$12.50
September	2015	3000	\$377.12	0	\$12.50
October	2015	2360	\$324.35	1	\$13.80
November	2015	2000	\$279.99	37	\$35.48
December	2015	2000	\$277.33	131	\$91.10
January	2016	2440	\$332.17	188	\$126.45
February	2016	2400	\$328.65	273	\$181.76
March	2016	2080	\$289.31	190	\$131.60
April	2016	2040	\$287.10	98	\$68.93
May	2016	2200	\$306.26	60	\$48.04
June	2016	2840	\$383.00	9	\$19.60
July	2016	3440	\$450.29	0	\$13.58
August	2016	3680	\$491.33	0	\$13.31
September	2016	3000	\$418.14	0	\$13.17
October	2016	2480	\$359.92	0	\$13.58
November	2016	1920	\$288.25	28	\$31.32
December	2016	2120	\$313.86	143	\$98.36
January	2017	2440	\$353.65	290	\$189.77
February	2017	2000	\$297.75	223	\$148.88
March	2017	1760	\$267.61	131	\$94.09
April	2017	2160	\$318.27	135	\$99.32

Month	Year	Scope 2 - Electricity (kWh) ¹	Cost	Scope 1 - Gas (CCF) ²	Cost
May	2017	1880	\$282.81	64	\$56.40
June	2017	2240	\$322.62	5	\$17.61
July	2017	2520	\$357.34	0	\$13.58
August	2017	2880	\$402.04	0	\$13.60
September	2017	2520	\$351.90	0	\$14.00
October	2017	2520	\$339.87	0	\$14.00
November	2017	1920	\$274.70	61	\$52.43
December	2017	2080	\$298.48	144	\$104.48
January	2018	2480	\$362.84	286	\$190.32
February	2018	2000	\$301.22	265	\$180.34
March	2018	1880	\$285.82	232	\$166.76
April	2018	1880	\$285.89	203	\$138.05
May	2018	1960	\$299.62	127	\$92.50
June	2018	2720	\$393.86	24	\$30.44
July	2018	3560	\$499.34	0	\$15.01
August	2018	3480	\$480.80	1	\$16.49
September	2018	2920	\$404.56	0	\$14.78
October	2018	2280	\$330.59	9	\$20.37
November	2018	2000	\$296.43	172	\$120.42
December	2018	2200	\$320.84	265	\$181.51
January	2019	2280	\$325.06	233	\$167.09
February	2019	2280	\$325.06	327	\$218.57
March	2019	2160	\$310.78	239	\$163.73
April	2019	2040	\$293.60	147	\$106.64
May	2019	2160	\$302.01	61	\$51.99
June	2019	2200	\$314.36	1	\$15.44
July	2019	3520	\$512.44	0	\$14.55
August	2019	4040	\$579.52	0	\$18.54
September	2019	3200	\$470.73	0	\$14.55
October	2019	2720	\$403.83	4	\$17.76
November	2019	2040	\$313.09	174	\$131.69
December	2019	2320	\$352.33	211	\$158.18
January	2020	2040	\$309.09	192	\$141.33
February	2020	2320	\$349.10	193	\$138.81
March	2020	2520	\$382.85	159	\$117.20
April	2020	1800	\$290.97	103	\$78.52
May	2020	1640	\$234.07	81	\$65.40

Month	Year	Scope 2 - Electricity (kWh) ¹	Cost	Scope 1 - Gas (CCF) ²	Cost
June	2020	2720	\$403.90	15	\$24.55
July	2020	3720	\$529.89	0	\$14.00
August	2020	3400	\$489.58	0	\$14.00
September	2020	2280	\$388.66	N/A	\$15.49
October	2020	2280	\$388.66	N/A	\$18.07
November	2020	1880	\$350.64	72	\$64.73
December	2020	2080	\$362.14	176	\$135.48
January	2021	1840	\$330.59	250	\$181.68
February	2021	2200	\$378.37	294	\$209.85
March	2021	1760	\$319.98	164	\$122.22
April	2021	1760	\$319.98	58	\$58.55
May	2021	1880	\$335.90	61	\$59.43
June	2021	2840	\$463.29	0	\$14.93
July	2021	2800	\$457.99	0	\$15.00
August	2021	3160	\$505.77	0	\$11.50
September	2021	4120	\$633.12	30	\$18.42
October	2021	2640	\$441.75	29	\$41.62
November	2021	2200	\$382.51	159	\$155.49
December	2021	2400	\$409.44	250	\$181.68
January	2022	N/A	\$388.84	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
Average		2397.68	\$357.13	104.67	\$83.38
Total		227,780	\$34,284.73	9839	\$8004.87

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

Figure 1 – 2021 Scope 2 Utility Usage

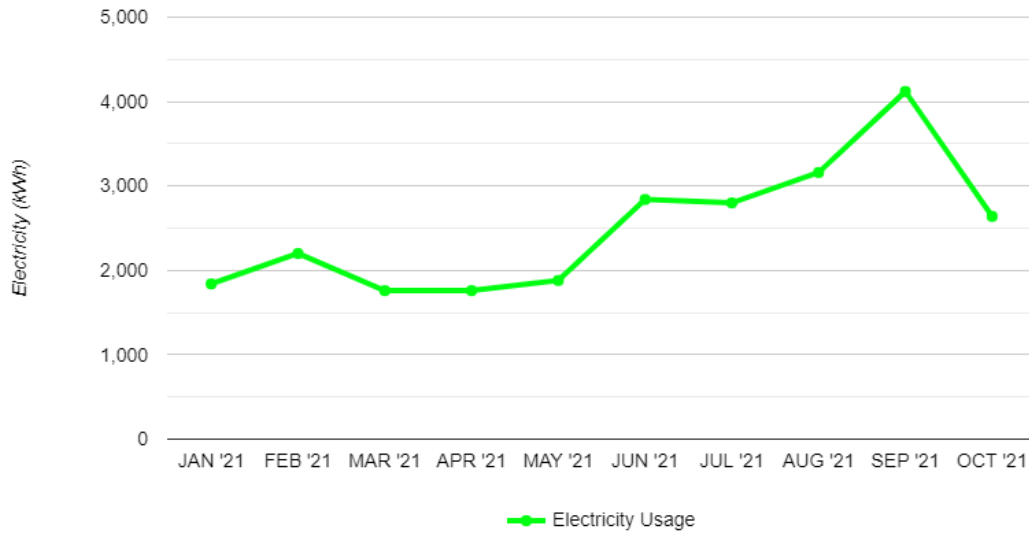
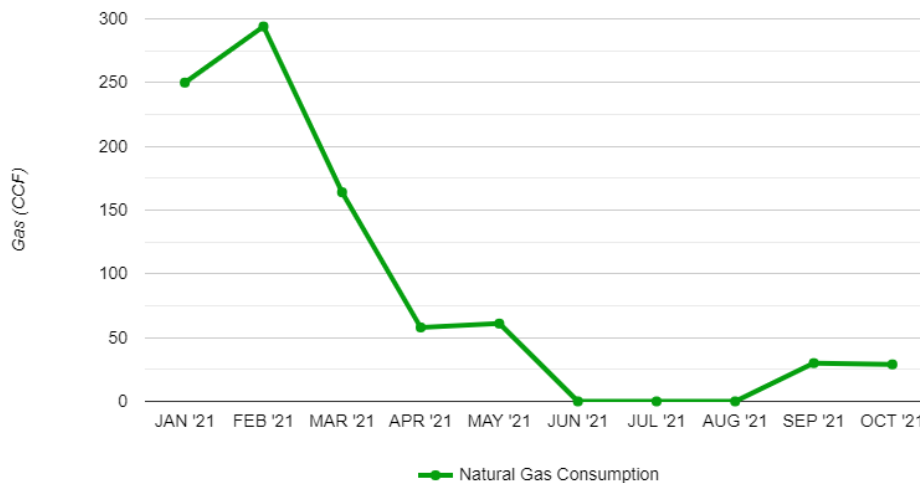


Figure 2 – 2021 Scope 1 Utility Usage



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.

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 2021, BB&E's EUI was 46.1 thousand British thermal units per square foot per year (kBtu/sf-yr) and \$1.20/sf-yr. For a general comparison, an office with less than 10,000 square feet averages 63 kBtu/sf-yr. 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

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July 2022
BB&E Inc.

Scope 2 - Electricity	Raw	EPA Calculator
2019	30960 kWh	13.4 metric tons
2020	28680 kWh	12.4 metric tons
2021	29600 kWh	12.8 metric tons
2022 (YTD from time of writing)	11320 kWh	4.9 metric tons

Scope 1 - Gas	Raw	EPA Calculator
2019	139.7 mcf	7.7 metric tons
2020	99.1 mcf	5.5 metric tons
2021	129.5 mcf	7.1 metric tons
2022 (YTD from time of writing)	113.6 mcf	6.3 metric tons

