

Sustainability Action Plan for Centeva, LLC

Consulting Capstone Project, Summer 2020

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HARVARD
Extension School

Executive Summary

The purpose of this capstone project is to create a Sustainability Action Plan for Centeva, LLC to fulfill the capstone requirement for the consultant's master's degree in Sustainability (Dadhich, 2019). The consultant, Loren Audette, a graduate student at Harvard Extension School, worked with Annie Quan, Deputy Chief of Operations and Director of Business Development of Centeva, on the client's deliverables.

The Sustainability Action Plan is designed to provide a comprehensive foundational document which will guide Centeva in a Triple Bottom Line approach (People, Planet, Profit), and includes sustainability initiatives that will fit with their culture, a change management and education plan for sustainability through stakeholder engagement, and a roadmap for how to implement the plan.

The project process engaged many of Centeva's 100 employees, including the executive suite: CEO Jan Quan-Esplin, COO Matthew Thomas, and Deputy COO Annie Quan; and employees at Centeva's three offices located in Logan, Utah, South Jordan, Utah, and Rockville, Maryland. The consultant engaged external stakeholders, including employees of Logan City Light and Power and solar panel vendors (Dadhich, 2019).

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Background and Client Requirements

Centeva, LLC is a management consulting firm providing “*Customer Excellence through Service Excellence*” (Centeva, 2019a). They assist U.S. government agencies with all of their acquisition-related needs, including “organizational alignment, policy revisions, systems modernization, process reengineering, staff development, and staff augmentation” (Centeva, 2018). Centeva has three offices located in Rockville, Maryland, Logan, Utah, and South Jordan, Utah. These offices are utilized by employees when they are not working directly on-site at customers’ offices.

Centeva’s mission is to bring people together to achieve a common goal and empower teams through the “unity of people, establishment of purpose, refinement of structure, installment of standards, development of capabilities, and delivery of technologies and support” (Centeva, 2019b). They are interested in sustainability because they are agents of change, seeking to use innovation and creativity to transform their clients and the world for the better. They believe each person should endeavor to do their part to leave a small footprint and to provide a positive contribution by doing what is right over what is profitable. In accordance with these pursuits, Centeva has implemented health & wellness initiatives, including providing standing desks for employees working at Centeva offices, as well as a yearly step-challenge in April.

They have implemented water saving strategies at their Logan, Utah office through removing the outdoor lawn sprinkler system and replacing it with 28 new drought-resistant plants and a drip irrigation system in 2019.

They have also implemented strategies that are inherently sustainable, including requiring all work travel be approved, which has the benefit of limiting costs and emissions associated with unnecessary business travel. And, the Deputy COO prints marketing material locally near the conferences and events she attends instead of at Centeva’s offices as it would require unnecessary transport fees and emissions.

However, Centeva still has significant opportunities to become a sustainable company. Centeva is a small business that is on the cusp of becoming a mid-size business and in its current agile state is in the perfect position to implement policies that will ensure the success of the triple-bottom line going forward: People, Planet, Profit.

Centeva has previously attempted to reduce paper usage and increase recycling; however, these programs did not continue past the initial roll-out. Centeva is still relatively new to sustainability and they require that the Sustainability Action Plan include implementation of a program that will establish sustainability management policies, as well as educate and engage their employees to follow through on the sustainable initiatives. They require the plan address energy efficiency and opportunities to use renewable energy, when available, for their offices. They also want information on public transportation available for their employees to travel to and from work.

Opportunities & Risks

Why should Centeva embrace sustainability?

Sustainable practices not only allow a company to minimize their environmental footprint, but they can help companies maintain a license to operate in their communities, build brand strength, improve their employee satisfaction and quality of their hiring pool, expand on clientele - opening new markets and industries, and increase their value compared to their competitors (Blackburn, 2015; Berg et al., 2015) As a consulting company whose main asset is their human capital, including their employees, clients, and communities in which they operate, Centeva has a compelling business case for sustainability. Figure 1, below, details the value-added opportunities sustainability provides:



Figure 1: Sustainability Creates Value Through Growth, Risk Management, and Returns on Capital (Berg et al., 2015)

There are several arguments for how implementing sustainability as a core business strategy will add value to Centeva’s business and overall culture. Many sustainability initiatives reduce a company’s operating costs, helping companies to become a “leaner, stronger, and healthier business” (Sitarz, 2008, p. 15). Further, “environmental footprint” is a tool companies can now use to benchmark and compare their impacts across various measures (Segars & Crawford-Brown, 2008). Sustainability initiatives also allow companies to manage risk and an ability to future-proof their business. By reducing energy and water used, as well as waste created, Centeva will be able to continue operating in a future where there are less resources available. And, by increasing efficiencies, they can offer more value to customers than their competitors (Berg et al., 2015; Blackburn, 2015). By implementing a sustainability program, and having a success story to tell clients, Centeva could enter new markets and industries, increasing their market reach (Blackburn, 2015).

A company’s reputation can affect their hiring pool and clientele (Blackburn, 2015). Studies show 25-35% of a company’s reputation can be based on performance in social and environmental issues (Blackburn, 2015, Ch. 3, para 21-22). And, not only are customers looking

to companies that share their values, but employees are as well. A McKinsey & Company study reports that the “majority of employees in the corporate world feel “disengaged”; they are agitating for decisions and behaviors that they can be proud to stand behind and gravitating toward companies that have a clear, unequivocal, and positive impact on the world” (Gast et al., 2020, para 5). Employees, especially millennials, are interested in working for a company with a strong environmental agenda and a strong purpose (Gast et al., 2020; Peters, 2019). The study also found that “contributing to society and creating meaningful work, the top two priorities of employees in [the] survey, are the focus of just 21 percent and 11 percent of purpose statements, respectively” (Gast et al., 2020, para 8). Sustainability has been found to be a key driver in employee satisfaction and retention (Peters, 2019). Without sustainability, Centeva is a risk of losing talented employees who are interested in working for a company that shares the same values as they do (Gast et al., 2020). When employees find meaning in their jobs, they are more engaged which leads to increased performance and profitability (Casey & Sieber, 2016).

Key Stakeholders

- Jan Quan-Esplin, Chief Executive Officer
- John Esplin, President
- Matt Thomas, Chief Financial Officer & Chief Operations Officer
- Annie Quan, Deputy Chief Operations Officer & Director of Business Development
- Centeva Staff
- Centeva Vendors
- Centeva Customers

Recommended Initiatives



Figure 2: Centeva Mission as stated in the Employee Handbook (Centeva, 2019a)

Centeva's vision of the future is to provide “*Customer Excellence through Service Excellence*” (Figure 2, above) (Centeva, 2019a). In order to embody this mission with sustainability in mind, they are encouraged to rethink their company values of “Integrity, Quality, Innovation, and Excellence” to not just include what Centeva provides for its customers, but also what Centeva embodies for its employees. They can foster an environment of **Integrity** by prioritizing transparent communication, which includes educating and promoting their values, initiatives, success stories, and *pain-points* with their stakeholders. **Quality** does not just mean to provide quality work, but for Centeva it could mean to cultivate a quality workforce, one that is an inclusive, diverse, empowered team of talented, passionate employees and where Centeva is an “employer of choice.” **Innovation** means employees who take risks and stay curious, never resting on tradition or past success and who continue to learn and grow. Through these Centeva can continue to provide the best company culture possible where employees can truly embody **Excellence**.

How can this be accomplished? How can Centeva support their employees and communities to be *excellent*? It will be through supporting triple bottom line: People, Planet, and Profit. By measuring their impact on the environment and setting clear, achievable goals to reduce their impact. By taking an annual employee satisfaction survey and implementing a Health & Wellness education series that helps employees with their personal development. And, by promoting their sustainable initiatives and cost-saving practices into all internal and external communications to increase brand reputation with customers which will assist in gaining new contracts and increase the available talent in their hiring pool, leading to an even more effective, innovative company who helps their customers excel.

Table 1, below, depicts the Recommended Sustainability Initiatives:

<p>Energy Use Including Lighting, Heating and AC & Renewable Energy</p> <ul style="list-style-type: none"> • Energy Management Program <ul style="list-style-type: none"> ○ U.S. EPA Energy Star’s Portfolio Manager to track energy and water usage in Centeva’s office buildings ○ Enable all computers for sleep mode to reduce energy use when idle ○ Unplug equipment when fully charged ○ Turn off equipment at night/weekends when not needed for remote access ○ Set optimal building temperature 68°F in winter 78°F in summer when employees are on-site and change building temperature 7-10° at night/weekends ○ Turn off hot water at bathroom sinks ○ Ongoing upkeep and maintenance of new HVAC system ○ Using LED lightbulbs ○ Using Energy Star rated appliances ○ Provide signage to remind employees to turn off lights and equipment when not in use • Buying renewable energy certificates or offsets for energy used at Logan, Utah office • Solar panel installation at Logan, Utah office (proposals)
<p>Water Conservation</p> <ul style="list-style-type: none"> • Employee education on water saving techniques • Install automatic shutoff sensor faucets in bathrooms at Logan, Utah office • Install aerators in bathroom and kitchen faucets at Logan, Utah office
<p>Recycling and Waste Management</p> <ul style="list-style-type: none"> • “Print Local” policy – for marketing and training materials <ul style="list-style-type: none"> ○ Print marketing and training materials near the event to reduce transportation fees and emissions ○ Use 100% recycled and recyclable paper for marketing materials ○ Use 100% recycled and recyclable material for business cards • “Zero Print” Policy for other materials

- Provide signage to remind employees to “Think Before You Ink”
- Utilize whiteboards and digital options to reduce need for paper print-outs
- Printing only when necessary
- Printing double-sided and in black & white/grayscale
- Using only recycled & Forest Stewardship Council (FSC) certified paper
- “Recycling Program”: all paper waste and plastic beverage containers
 - Provide centrally located recycling bin and trash can in kitchens, conference rooms, break-out rooms, etc.
 - Provide a recycling bin next to every trash can
 - Provide signage for all recycling bins with acceptable items per local rules (Utah vs. Maryland recycling facilities)
 - Educate all employees on where to put waste and how to separate waste
- “Electronic Waste Recycling Program”
 - Donate old laptops and equipment to local educational charities or have the parts recycled for new cycles of use within circular economy

Transportation

- “Work from Home” Program
 - Mandatory telework day each week at Centeva’s offices to reduce employee commute
 - Utilize tools and resources available such as TEAMS or GoToMeeting for virtual meetings to continue to deliver customer excellence
- Alternative Work Schedules
 - Allow employees to arrive later/earlier and leave later/earlier to accommodate public transportation schedules and avoid rush hour by taking advantage of public transport during off-peak travel
- Begin tracking Business Travel and Employee Commutes in a consistent way that allows Centeva to make business decisions

Stakeholder Engagement

(See Fostering Sustainable Behavior section)

- Hiring – include Sustainability goals in job advertisements and during interviews
- Onboarding – debrief on Sustainability values and goals
- Sustainability Committee (Green Team)
- Personal Development Training (Quarterly) – 360° Health & Wellness Education series on Mindfulness, Emotional Intelligence, etc.
- Professional Development Training (Quarterly) – on Critical Thinking, Unconscious Bias, Managing a Virtual Team, etc.
- Centeva Website – Sustainability initiative announcements and achievements; articles on sustainability
- Employee Satisfaction Survey (Yearly) with 100% participation
- All-Hands (Monthly): Sustainability Tips & Tricks, Initiative Reminders, and Call to Actions (ex. Best Practices for Saving Money at Home with Sustainability)
- Include Sustainability goals and achievements in responses to solicitations, kick-off meetings, and discussions with COR/CO/CS

- Include Sustainability goals and achievements in marketing material (digital and prints), at conferences, and virtual meetings

Table 1: Recommended Sustainability Initiatives

Business Case for Implementing an “Energy Management Plan”

“Over the next 25 years, greenhouse gas emissions from buildings are projected to grow faster than any other sector, and are expected to increase almost 2 percent a year through 2030. We have the largest opportunity to save energy, save money, and protect the environment by increasing energy efficiency in the buildings where we work, play, and learn” (Energy Star, 2016b, slide 5).

Although Centeva mostly provides services, instead of manufacturing products, they still generate costs and emissions associated with the energy they use, which is a large part of any business’ expenses (Sitarz, 2008). “The greater your carbon footprint, the greater vulnerability your business has to price increases, regulations, and other changes that will accompany a market price for carbon” (Sitarz, 2008, p. 62). Centeva is interested in using renewable energy in their owned office buildings; however, purchasing solar or wind power will not be enough, they must also address and reduce the *use* of energy within their buildings -- which is not only environmentally advantageous, but is a smart cost-effective strategy as well (Sitarz, 2008).

The U.S. Energy Information Administration reports that lighting, refrigeration, ventilation, cooling, and computers and other office equipment account for the top end uses in a commercial building energy (EIA, 2018). Figure 3, below, depicts the use levels:

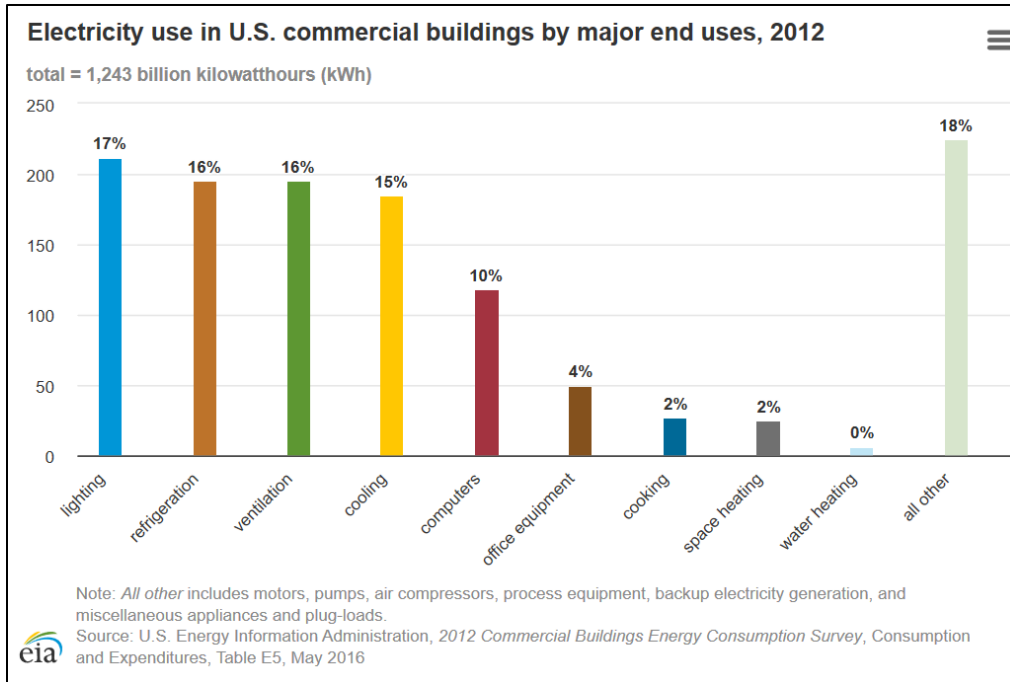


Figure 3: Electricity use in U.S. commercial buildings by major end uses, 2012 (EIA, 2018)

In 2018 and 2019, Centeva’s largest utility cost at their Logan, Utah commercial office building was associated with electricity which accounted for 34-81% of the total utility bills each month, which also includes their natural gas, water, sewer, storm water clean-up, waste, and recycling charges.

Figure 4, below, details these variable and fixed utility costs for Centeva’s Logan, Utah office in 2018 & 2019. Please note, the legend depicts the individual items Centeva is charged for each month. Those with a “(V)” next to them are variable. Those with a “(F)” next to them are fixed prices that are consistently charged the same amount each month, with periodic increases.

2018 and 2019 Utilities at Logan, UT Office

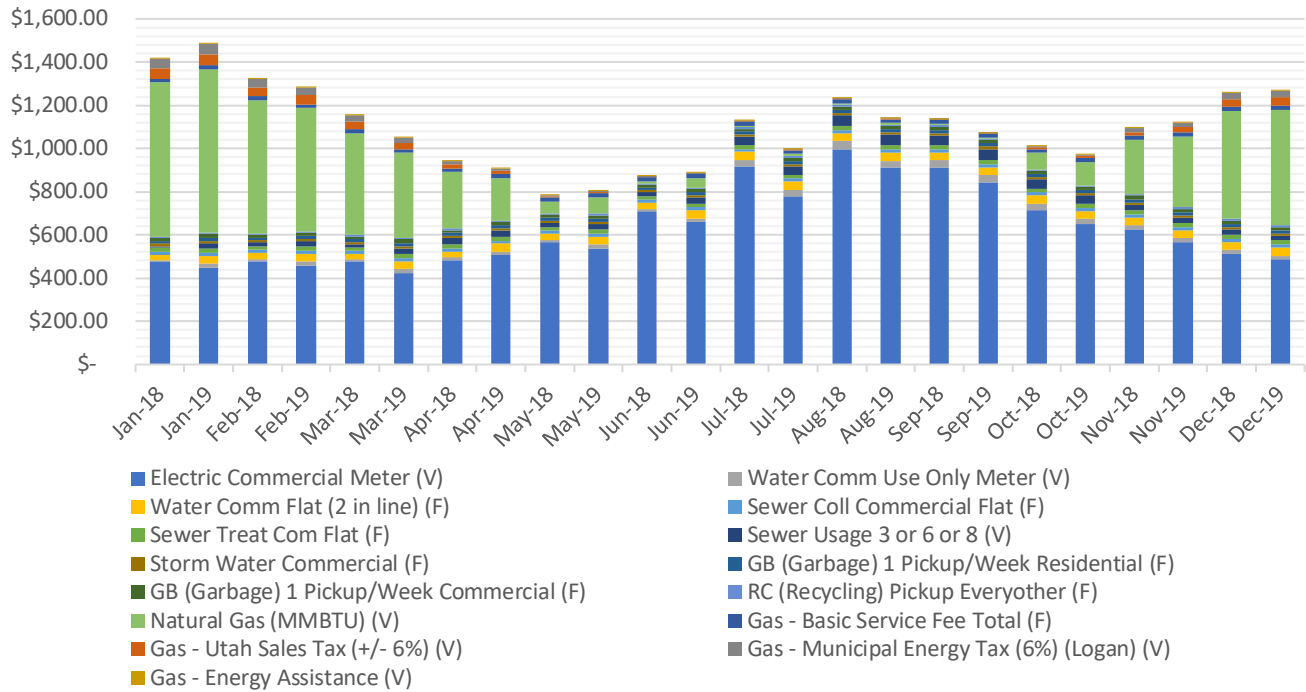


Figure 4: Centeva's Utility Fees (\$) for the Logan, UT Office 2018 and 2019

2018 and 2019 Electricity Consumption (kWh) at Logan, UT Office

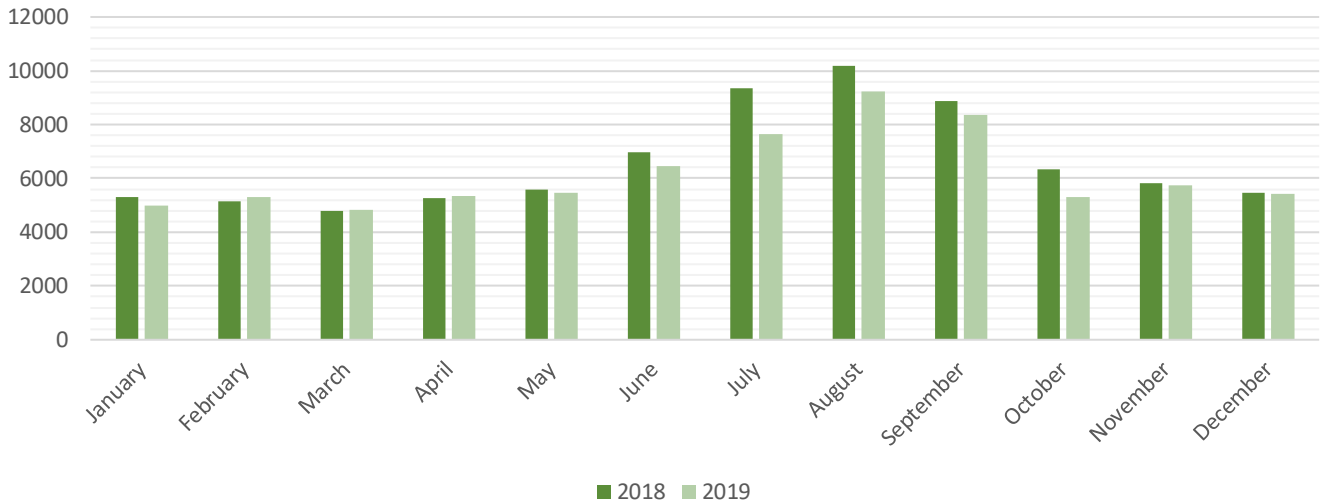


Figure 5: Centeva's Electricity Consumption (kWh) for the Logan, UT Office 2018 and 2019

Figure 5, above, breaks out the 2018 and 2019 electricity consumption. Centeva uses electricity to power most of the Logan office equipment, including the employee computers and printers, lighting, kitchen refrigerators, the on-site server, and the HVAC cooling system which helps to keep the office space cool and the server at optimal temperature. Their electricity energy usage generated 23.54 metric tons (mt) CO₂e (carbon dioxide equivalent) greenhouse gas emissions in 2018 and 22.05 mt in 2019. Table 2 and 3, below, detail these calculations:

Centeva Technology Center (Logan, UT) Scope 2: Electricity Use Emissions 2018		
Electricity Used (kWh)	79,200 kWh	
Conversion Factor	0.001 MWh/kWh	Google Conversion
Electricity Used (MWh)	79.2 MWh	
eGRID Location: Zip Code 84321	NWPP	(Environmental Protection Agency, 2020c)
CO ₂	651.2 lbs CO ₂ /MWh	eGRID 2016 Emission Rates (The Climate Registry, 2019b, pg. 48)
Conversion Factor	2204.6 lbs/mt	Google Conversion
Equation 14d: Calculating Indirect Emissions from Electricity Use	23.394 mt CO₂ emissions	(The Climate Registry, 2016, pg. 106)
CH ₄ using GWh	61 lbs CH ₄ /GWh	(The Climate Registry, 2019b, pg. 50)
Conversion Factor	0.001 MWh/GWh	Google Conversion
NWPP CH ₄ using MWh	0.061 lbs CH ₄ /MWh	
Equation 14d: Calculating Indirect Emissions from Electricity Use	0.0022 mt CH₄ emissions	(The Climate Registry, 2016, pg. 106)
N ₂ O using GWh	9 lbs N ₂ O/GWh	(The Climate Registry, 2019b, pg. 50)
Conversion Factor	0.001 MWh/GWh	Google Conversion
NWPP N ₂ O using MWh	0.009 lbs N ₂ O/MWh	
Equation 14d: Calculating Indirect Emissions from Electricity Use	0.0003 mt N₂O emissions	(The Climate Registry, 2016, pg. 106)
GWP Conversion to CO ₂ e		
CO ₂ emissions	23.394 mt CO ₂ emissions	
CO ₂ GWP AR5	1	Global Warming Potential Factors for Required Greenhouse Gases (The Climate Registry, 2019b, pg. 79)
Equation 14e: Converting to CO ₂ e	23.39 mt CO₂e emissions	(The Climate Registry, 2016, pg. 106)
GWP Conversion to CO ₂ e		
CH ₄ emissions	0.002 mt CH ₄ emissions	
CH ₄ GWP AR5	28	Global Warming Potential Factors for Required Greenhouse Gases (The Climate Registry, 2019b, pg. 79)
Equation 14e: Converting to CO ₂ e	0.06 mt CO₂e emissions	(The Climate Registry, 2016, pg. 106)
GWP Conversion to CO ₂ e		
N ₂ O emissions	0.000 mt N ₂ O emissions	
N ₂ O GWP AR5	265	Global Warming Potential Factors for Required Greenhouse Gases (The Climate Registry, 2019b, pg. 79)
Equation 14e: Converting to CO ₂ e	0.09 mt CO₂e emissions	(The Climate Registry, 2016, pg. 106)
Scope 2 electricity use emissions for 2018	23.54 mt CO₂e	

Table

2: Centeva's Scope 2 Emissions (mt CO₂e) for Logan, UT Office in 2018

Centeva Technology Center (Logan, UT) Scope 2: Electricity Use Emissions 2019		
Electricity Used (kWh)	74,200 kWh	
Conversion Factor	0.001 MWh/kWh	Google Conversion
Electricity Used (MWh)	74.2 MWh	
eGRID Location: Zip Code 84321	NWPP	(Environmental Protection Agency, 2020c)
CO2	651.2 lbs CO2/MWh	eGRID 2016 Emission Rates (The Climate Registry, 2019b, pg. 48)
Conversion Factor	2204.6 lbs/mt	Google Conversion
Equation 14d: Calculating Indirect Emissions from Electricity Use	21.917 mt CO2 emissions	(The Climate Registry, 2016, pg. 106)
CH4 using GWh	61 lbs CH4/GWh	(The Climate Registry, 2019b, pg. 50)
Conversion Factor	0.001 MWh/GWh	Google Conversion
NWPP CH4 using MWh	0.061 lbs CH4/MWh	
Equation 14d: Calculating Indirect Emissions from Electricity Use	0.0021 mt CH4 emissions	(The Climate Registry, 2016, pg. 106)
N2O using GWh	9 lbs N2O/GWh	(The Climate Registry, 2019b, pg. 50)
Conversion Factor	0.001 MWh/GWh	Google Conversion
NWPP N2O using MWh	0.009 lbs N2O/MWh	
Equation 14d: Calculating Indirect Emissions from Electricity Use	0.0003 mt N2O emissions	(The Climate Registry, 2016, pg. 106)
GWP Conversion to CO2e		
CO2 emissions	21.917 mt CO2 emissions	
CO2 GWP AR5	1	Global Warming Potential Factors for Required Greenhouse Gases (The Climate Registry, 2019b, pg. 79)
Equation 14e: Converting to CO2e	21.92 mt CO2e emissions	(The Climate Registry, 2016, pg. 106)
GWP Conversion to CO2e		
CH4 emissions	0.002 mt CH4 emissions	
CH4 GWP AR5	28	Global Warming Potential Factors for Required Greenhouse Gases (The Climate Registry, 2019b, pg. 79)
Equation 14e: Converting to CO2e	0.06 mt CO2e emissions	(The Climate Registry, 2016, pg. 106)
GWP Conversion to CO2e		
N2O emissions	0.000 mt N2O emissions	
N2O GWP AR5	265	Global Warming Potential Factors for Required Greenhouse Gases (The Climate Registry, 2019b, pg. 79)
Equation 14e: Converting to CO2e	0.08 mt CO2e emissions	(The Climate Registry, 2016, pg. 106)
Scope 2 electricity use emissions for 2019	22.05 mt CO2e	

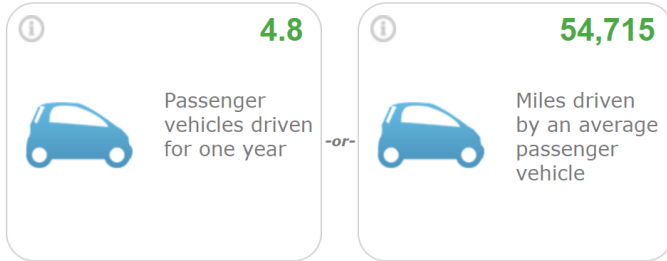
Table 3: Centeva's Scope 2 Emissions (mt CO2e) for Logan, UT Office in 2019

According to the EPA's *Greenhouse Gas Equivalencies Calculator*, Figure 6, below, their 2019 Scope 2 emissions at the Logan, Utah office are equivalent to:

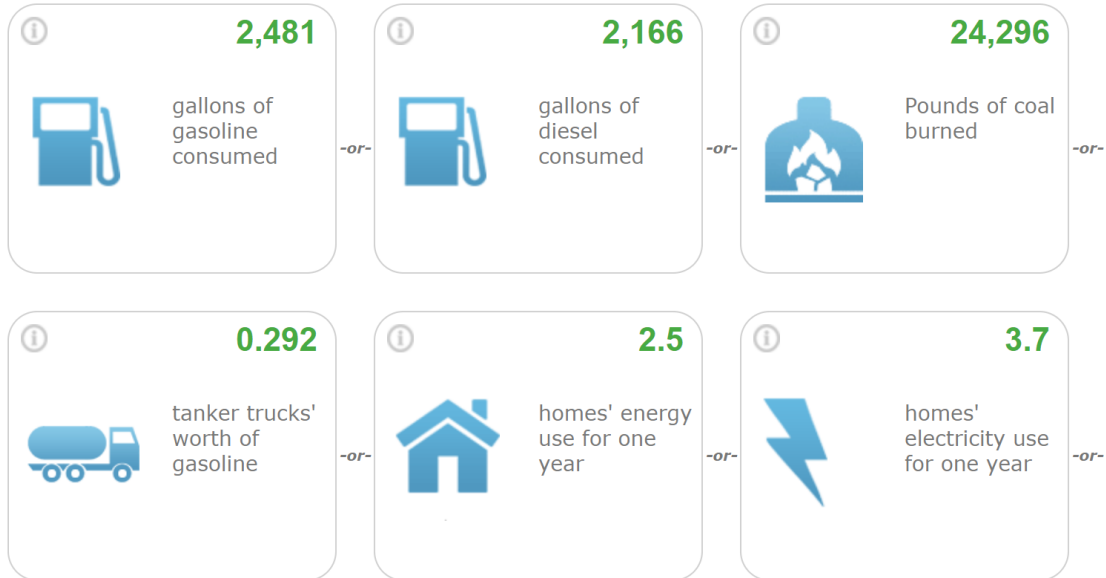
The sum of the greenhouse gas emissions you entered above is of Carbon Dioxide Equivalent. This is equivalent to:

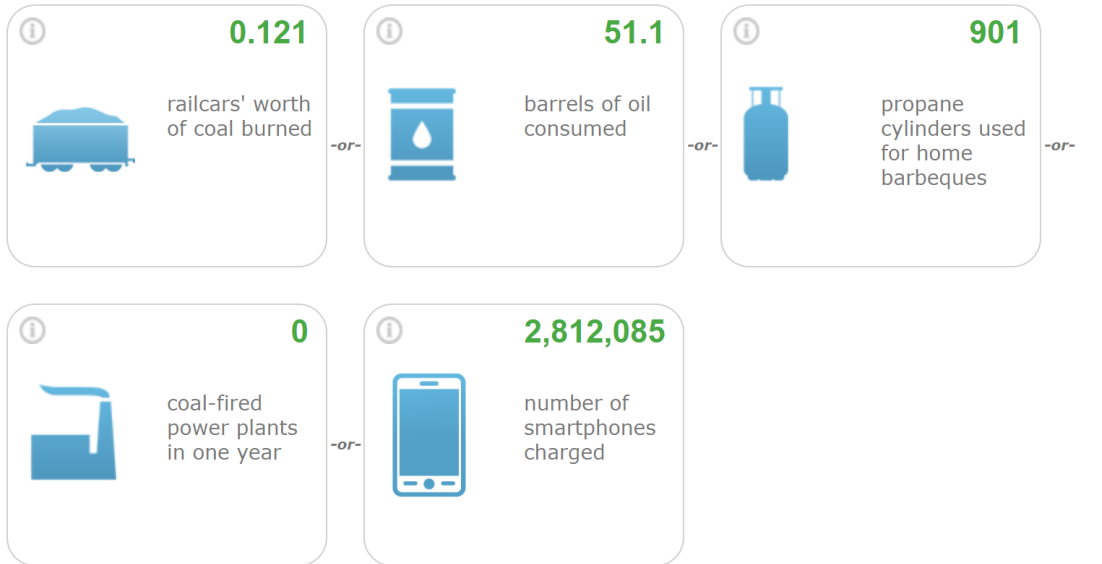
22.1 Metric Tons

Greenhouse gas emissions from

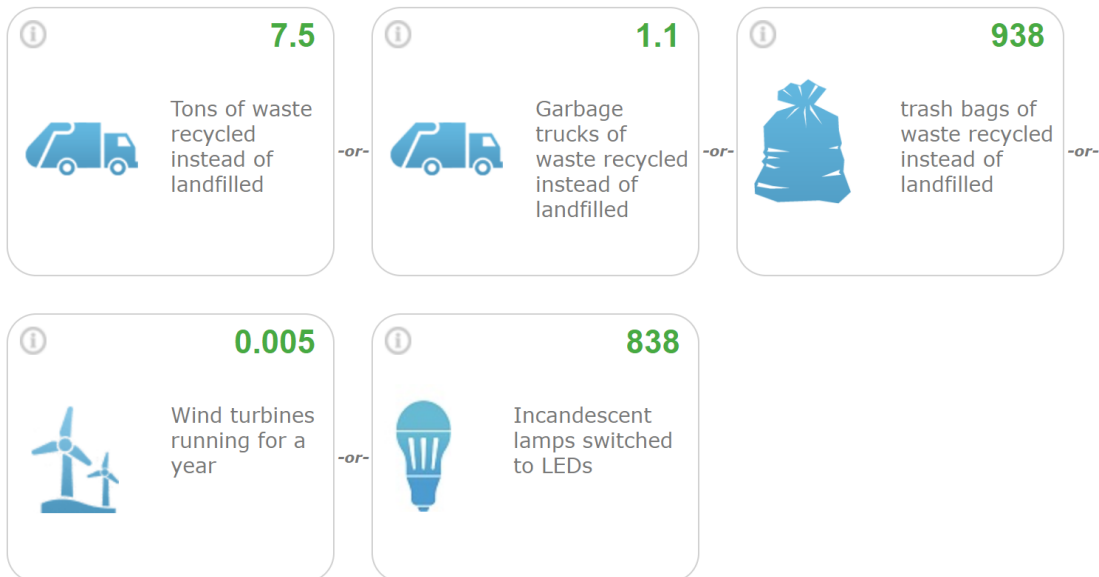


CO₂ emissions from





Greenhouse gas emissions avoided by



Carbon sequestered by



Figure 6: Greenhouse Gas Equivalencies Calculator for Centeva's Electricity Emissions at Logan, UT office, 2019 (EPA, 2018b)

Centeva is already making strides in energy efficiency in lighting by only turning on kitchen, break room, and conference room lights most days and using LED lightbulbs. They have also

recently installed a new HVAC system at our Logan, Utah office. A collaboration between the EPA and Innovest found that “a commercial building owner can generate \$2 to \$3 of asset value for every \$1 invested in energy performance improvements” (Sitarz, 2008, p. 236). It is recommended they continue to maintain the new HVAC system through regular maintenance, including cleaning the equipment and replacing filters, as this can help “realize savings of 10 percent or more-at little or no cost” (Sitarz, 2008, p. 61). It is also recommended that they continue to buy not just LED, but Energy Star certified lightbulbs, when available. For example, switching out 20 of their current kitchen tube lights from a 20-watt to a 16-watt replacement could reduce their cost of bulbs and electricity by an estimated \$151, their use of electricity by 159 kWh per year, and carbon dioxide emissions by 254 lbs/kWh per year. And, both sets of bulbs are 40-watt equivalent, so there is no quality lost by using the lower wattage. Table 2, below, details these savings:

	Current Tube Light (Assumed) (Home Depot, 2020b)		Recommended Replacement (Home Depot, 2020c)		Calculations and Units
Wattage		20.0000		16.0000	
# Bulbs		20		20	
Hours bulbs used per day		8		8	
kWh		0.0200		0.0160	
Days bulbs used per year		249		249	365 Days/year minus 52 weekends and 12 federal holidays
kWh Use: 1 hour for one bulb		0.0200		0.0160	
kWh Use: 1 hour for all bulbs		0.4000		0.3200	
kWh Use: 1 day per bulb		3.2000		0.1280	
kWh Use: 1 year per bulb		39.8400		31.8720	
Energy Use (kWh) per year for all bulbs		796.8000		637.4400	
Energy Use (kWh) for 10 years for all bulbs		7968.0000		6374.4000	
ONE YEAR kWh SAVINGS - USE OF ELECTRICITY				159.36	kWh
TEN YEAR kWh SAVINGS - USE OF ELECTRICITY				1593.60	kWh
Logan, UT Cost of Electricity	\$	0.0728	\$	0.0728	Logan City Light and Power Commercial Services Calculator 2019 average cost per kWh based on Tier (Logan City, 2019a)
Cost of Electricity (\$): 1 hour for one bulb	\$	0.0015	\$	0.0012	
Cost of Electricity (\$): 1 hour all bulbs	\$	0.0291	\$	0.0233	
Cost of Electricity (\$): 1 year one bulb	\$	2.9011	\$	2.3209	
Cost of Electricity (\$) per year for all bulbs	\$	58.02	\$	46.42	(\$ dollars)
Cost of Electricity (\$) for 10 years for all bulbs	\$	580.23	\$	464.18	(\$ dollars)
ONE YEAR (\$) SAVINGS - COST OF ELECTRICITY				11.60	(\$ dollars)
TEN YEAR (\$) SAVINGS - COST OF ELECTRICITY				116.05	(\$ dollars)
Cost of Pack of Bulbs	\$	81.2000	\$	184.8100	
Number of Bulbs per Pack		10		30	
Cost per Bulb	\$	8.12	\$	6.16	
Lifetime (Hours) of each Bulb (see packaging)		35000		36000	Home Depot has "average life" before decrease in brightness, see bulb website
Hours Bulbs will be Used (Hours/Year)		1992		1992	
Lifetime (Years) Before Bulbs Need to Be Replaced based on Lifetime of Bulbs and Hours/Year Used		17.5703		18.0723	
Cost of Bulbs (\$) per year over for all bulbs	\$	324.80	\$	184.81	(\$ dollars)
Cost of Bulbs (\$) for 10 years for all bulbs.	\$	324.80	\$	184.81	(\$ dollars)
Note: same as one year if Lifetime is over 10 years					
ONE YEAR (\$) SAVINGS - COST OF BULBS				139.99	(\$ dollars)
TEN YEAR (\$) SAVINGS - COST OF BULBS				139.99	(\$ dollars)
UT CO2 Emissions (Energy Mix) (lbs per kWh)		1.5950		1.5950	Utah 2018 Carbon Dioxide equivalent (CO2e) lbs/kWh (EIA, 2019)
CO2 emissions (lbs/kWh CO2e) per year for all bulbs		1270.8960		1016.7168	lbs/kWh
CO2 emissions (lbs/kWh CO2e) for 10 years for all bulbs		12708.9600		10167.1680	lbs/kWh
ONE YEAR(lbs/kWh) SAVINGS - CO2e				254.18	lbs/kWh
TEN YEAR (lbs/kWh) SAVINGS - CO2e				2541.79	lbs/kWh

Table 4: Est. Electricity Use (kWh) and Cost (\$) Savings of changing from 20 W to 16 W tube lights

Other changes recommended would be to implement an “Energy Management Plan” at all offices and partner with Energy Star. The Energy Star brand is recognized and trusted by 92% of consumers polled and they have a lot of advice available for free (Energy Star, 2019). By partnering with Energy Star and using their “Portfolio Manager” tool, it is easy for small businesses to track their energy use and utilize the resources available to reduce energy use, including webinars for onsite energy managers, “Brown Bag Lunch” presentation slides, and other employee education tools (EPA, 2016b).

Energy Star also provides the ability to benchmark, which may not be available otherwise among small businesses, who, unlike public companies, are not required to report any data, let alone environmental, social, or governance (ESG) documents. Energy Star recommendations include having the IT team “enable power management settings in appliances so they automatically enter a low-power mode when not in use” on both the computer and monitors (Energy Star, 2020e, para 5). Centeva IT should also disable screen savers as they can “prevent more efficient power management settings from taking effect on your computer” (Sitarz, 2008). They should also turn off ability for applications to “veto’ sleep mode” including Microsoft PowerPoint and large processor activity (Energy Star, 2020c). Initiating sleep features does not cause wear and tear on the computer and can save 1-2 watts of energy per laptop (Energy Star, 2020d; Digital Trends, 2020). Since turning off computers at night requires dedicated daily behavior changes, only saves 1-2 watts per day per computer, and studies have found only result in 70-90% compliance, it is not recommended that Centeva implement a policy that all computers are required to be turned off at night by individual employees; however, it is a best practice (Energy Star, 2020d).

Studies have found that “65% of computer energy consumption is used (read: wasted) when the computers are entirely idle” (Sitarz, 2008, p. 163). Therefore, it should also be required that computers and phones are unplugged when they are fully charged (EPA, 2016b; Sitarz, 2008; Strategic Sustainability Consulting, 2012). And, it is recommended that printers and other equipment that are not used every day be plugged into a “smart” power strip so that it can be turned off easily when not in use (Energy Star, 2020e). When equipment is left on, it not only uses energy, but it makes our HVAC system work harder to cool the building (EPA, 2016b). Centeva should also require that all lights get turned off when the last person leaves a room, including after meetings and in public spaces such as the kitchen and break rooms.

To ensure these simple behavior changes are reinforced, it is recommended that the Energy Management Plan is rolled out to all staff to assist in our energy efficiency efforts, that the Logan office facilities manager reinforce this by following up before they leave for the day, and that they put up signage to encourage and remind employees about saving energy around the office. For example, they can place signs up at every light switch to recommend employees turn off the lights as they exit (EPA, 2016b). See **Appendix II** for example signage.

Centeva has discussed migrating their onsite server to a cloud-based data system. This would decrease Centeva’s electricity usage, as the server requires continuous air conditioning to maintain optimal temperature. Beginning in March, 2020 Centeva closed the Logan, Utah office for the COVID-19 quarantine. In May, 2020 when most of the employees were still home the Logan, Utah office still used 3320 kWh electricity. Further research will need to be conducted, but it assumed the majority of this electricity use was being pulled for the server and HVAC cooling system. With an average monthly use of 6183 kWh in 2019, migrating the server online could save Centeva significantly in electricity use and fees.

The U.S. Office of the Federal Chief Information Officer reports the business case for using cloud capabilities is proven “to drive savings, to improve security, and to deliver mission-serving solutions faster” (2020, para 4). There are several cloud options available that provide efficiency in their servers, infrastructure, and energy usage that will allow Centeva to continue to pursue their sustainability goals (Oberhaus, 2019). Table 5, below, details Wired Magazine’s sustainability rating on Amazon Web Services, Google Cloud, and Microsoft Azure’s cloud-based servers. The ratings are based on the company’s reported use of renewable energy and offsets and technological innovations that assist them in enhancing efficiency and energy usage. For example, Google Cloud buys renewable energy so their entire company can report net zero carbon emissions and they use machine learning to continually monitor local temperatures, ensuring that data center temperatures can decrease or increase as needed in real-time to save energy and keep the servers cool (Oberhaus, 2019).

Rating	Google Cloud	Microsoft Azure	Amazon Web Services
Overall “Greenness”	B+	B	C-
Energy Efficiency	A+	A	B
Transparency	A	A	F
Technological Innovation	A	A+	Unknown
Total Renewable Energy Portfolio	5.5 GW	1.9 GW	1.6 GW

Table 5: Wired Magazine sustainability ratings for three cloud-based servers (Oberhaus, 2019)

Centeva uses natural gas to power the water heater and HVAC heating system. Figure 7, below, details the natural gas consumption of Centeva’s Logan office in 2018 and 2019.

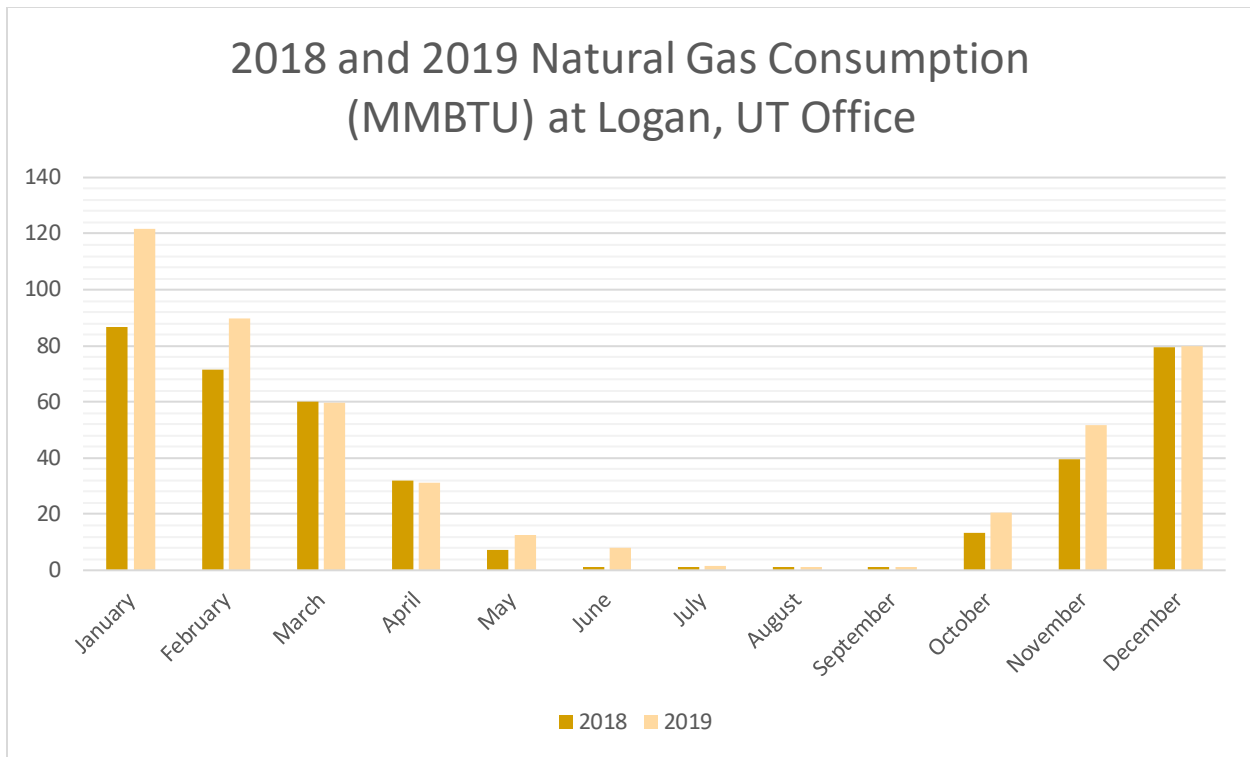


Figure 7: Centeva’s Natural Gas (MMBTU) for the Logan, UT Office 2018 and 2019

Since the gas is only used when the HVAC furnace is needed, or to heat the water in the building, it is recommended that Centeva determine a room temperature that is optimal for most employees to ensure they are not using energy to heat the office space warmer than necessary and without requiring individual employees the need to utilize a personal space heater. The U.S. Department of Energy (DOE) recommends setting the temperature during the workday to 68°F in the winter and 78°F in the summer (DOE, 2020b).

In addition, it is recommended that the hot water be turned off in all bathroom sinks and thermostats should be adjusted for evenings and weekends when there is no one in the building (Energy Star, 2020e). Reducing the temperature another 7-10° when employees have left for the day can provide further savings as there is less work for the system to do when the inside temperature matches the exterior (DOE, 2020b).

Other potential initiatives which will they not be able to move forward on include installing a submeter in Centeva’s leased spaces in Rockville, Maryland and South Jordan, Utah. Both buildings currently have Energy Star certification, which means they have already implemented

cost saving measures such as LED bulbs, motion-detecting lights that turn off automatically, low-flow toilets and automatic timed sinks, and onsite recycling to ensure all plastic bottles and cardboard are sorted out of waste bins (McLellan, personal communication, July 20, 2020).

Suggested Policy description for the Centeva Employee Handbook:

It is the responsibility of all employees to help achieve Centeva’s Energy Goals. To that end, we ask that all employees do their part to follow guidance from IT on proper use of equipment, turn off office equipment and lights when not in use, and communicate with management on any suggestions they have to reduce our energy (or other resource) usage.

Energy Star Portfolio Manager for Logan, Utah Office

One project Centeva wanted to pursue as part of the Sustainability Action Plan was researching the feasibility of installing solar panels at their office building in Logan, Utah. After studying the average energy usage of the building, unfortunately, they do not use enough energy to qualify for many commercial solar panel programs available in the area. Centeva’s 2019 electricity usage was 74,200 kWh; however, REC Solar, one of several companies the consultant spoke to, said they usually deal with companies who produce around 2 million kWh/year. The consultant is still pursuing options that fit a smaller company’s footprint.

Logan City Light & Power, Centeva’s utility provider, has a community solar farm, but they are only selling shares to residential customers at this time (Logan City, 2019c). If it becomes available for commercial clients in the future, it is recommended that Centeva revisit this service.

In the meantime, Centeva can still purchase carbon offsets to achieve net zero emissions or Renewable Energy Certificates (RECs) if they want to focus on having 100% renewable energy in their Logan, Utah office. There are many benefits to seeking out renewable energy options, including reduced air pollution and water consumption compared to electricity generation with fossil fuels (EPA, 2018e)

Carbon offsets are available to purchase in metric ton carbon dioxide equivalents (mt CO₂e) and help a business offset their emissions by essentially paying for other programs that reduce

emissions for you through the carbon negative endeavors like renewable energy and methane capture (Sitarz, 2008; Terrapass, 2020b). Companies can create emissions at different stages of their operations, both directly and indirectly and upstream and downstream called Scope 1, 2, and 3 emissions. Figure 8, below, breaks down when emissions are created and which scope they fall under:

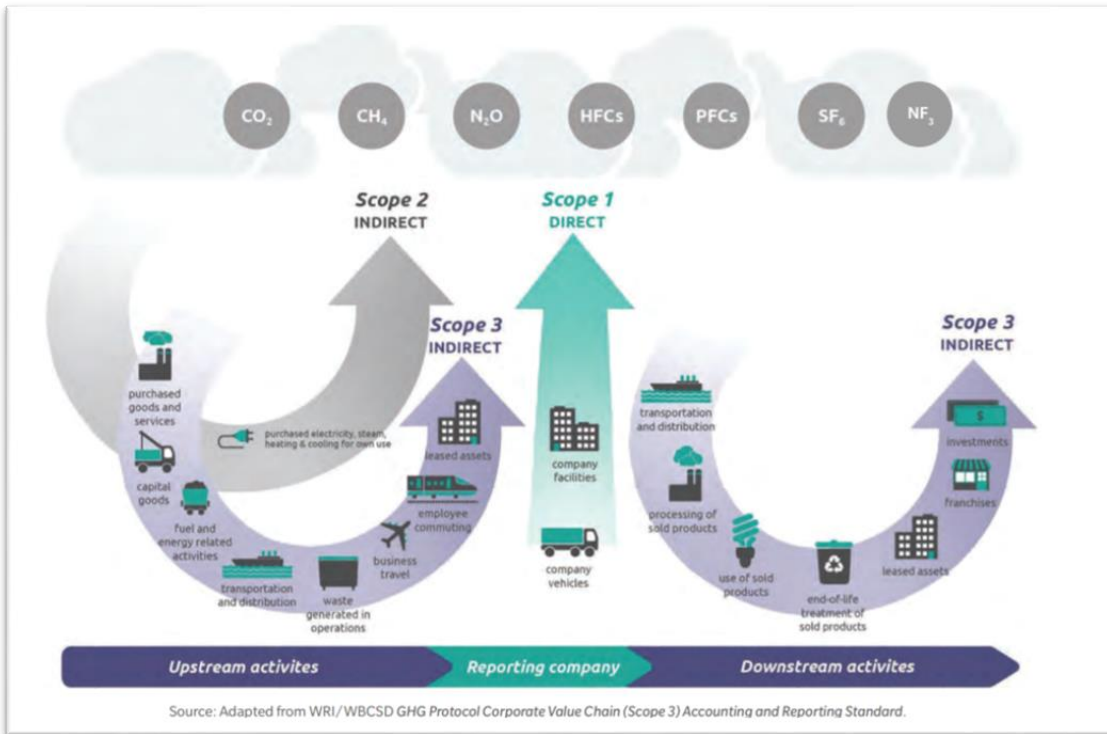


Figure 8: Overview of Scopes and Emissions throughout an Organization's Operations (The Climate Registry, 2019c)

Scope 1, 2, and 3 emissions are generated from diesel, natural gas, electricity, and other energy sources. After a company has reduced their emissions as much as possible, they can purchase offsets which allow them to achieve net zero or even net negative CO₂e emissions (The Climate Registry, 2019c). They will need to calculate their emissions, have a third-party verify the data, and then buy offsets to “zero out” their generated emissions (EPA, 2018d). An offset must be "additional" which means they would not have happened without the investment and they must be single use - as in someone else cannot use same credit as another (EPA, 2018d). It is important to go through trusted companies that can ensure high-quality, real offsets such as Green-e and The Gold Standard (The Climate Registry, 2019c; EPA, 2018d).

Alternatively, Renewable Energy Certificates or RECs represent a unit of electricity (kWh or MWh) and can only count toward a company’s Scope 2 emissions (EPA, 2018d). Companies can buy RECs, which allow them to claim partial or 100% Renewable Energy in their facilities (EPA, 2018d). Companies do not have to generate the energy themselves, instead it can be bought such as through a community solar or wind farm program (EPA, 2018d). Unlike carbon offsets, RECs do not have to be “additional” (EPA, 2018d).

It is recommended that Centeva first conduct a thorough Greenhouse Gas Emissions assessment, which, based on organizational boundaries will include their Logan office’s Scope 1, Scope 2, and Scope 3 emissions, and then they should determine which renewable energy path is best for them. To start this project, the consultant has created an Energy Star Portfolio Manager account and updated the system with 2018 and 2019 utility usage to assist in tracking their energy and water.

Water Conservation

In the US, office buildings use 9% of the total water consumed by commercial facilities (EPA, 2017b). Figure 9, below, provides a breakdown this water use, with restrooms, cooling and heating, and landscaping taking up the largest portions (EPA, 2017b)

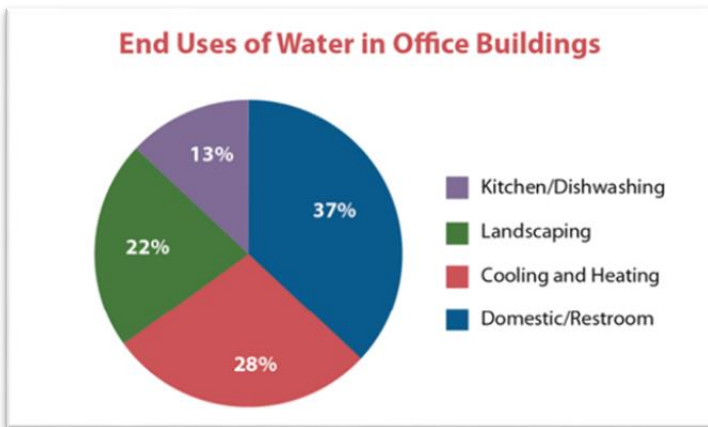


Figure 9: End Uses of Water in Commercial Office Buildings (EPA, 2017b)

In June 2019, Centeva removed the exterior sprinkler system at their Logan, Utah office and installed a drip irrigation system and drought resistant plants and rocks to cut back on water they

were wasting on inefficient landscaping. Figure 10, below details the water use at the Logan office in 2018 and 2019. The landscaping change contributed to a decrease in water usage by 6% between July 2018 and July 2019. And, water use at the Logan, Utah office has been continuously lower 2019 than 2018 as a result of this change.

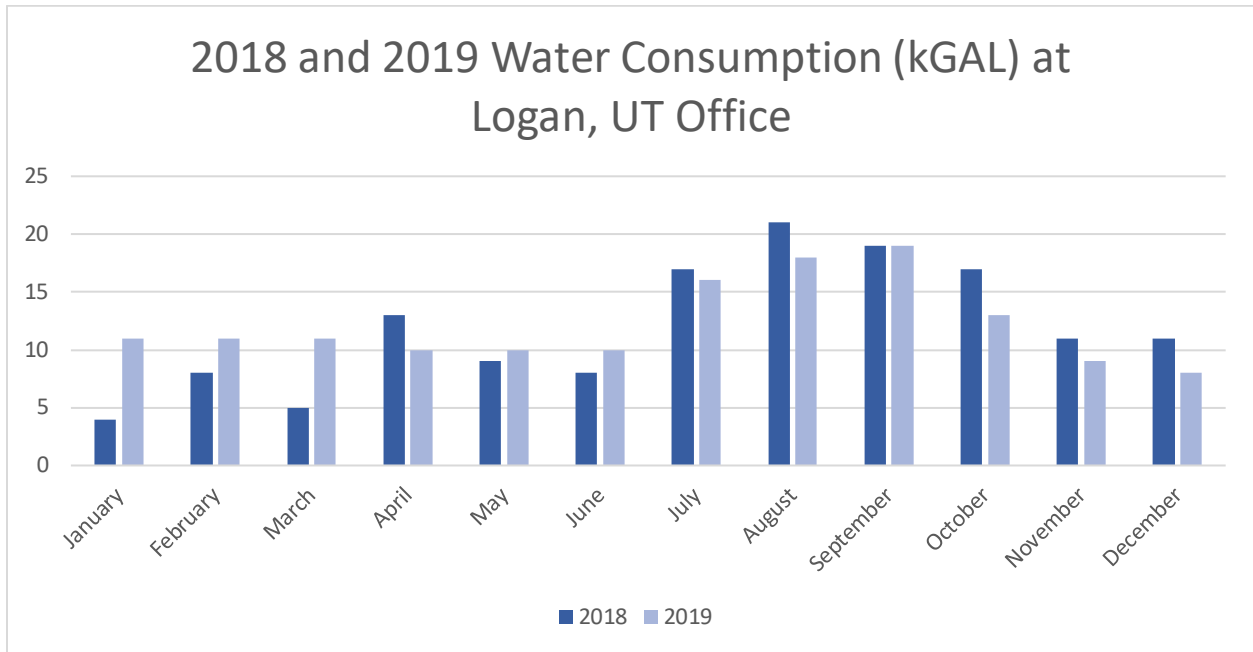


Figure 10: Centeva's Water Consumption (kGAL) in Logan, UT 2018 and 2019

Low Flow Sinks

There are four sinks in the Logan, Utah office bathrooms which are manually controlled. This requires the user to touch the faucet and turn on the water, with no settings to control the amount of time the faucet is turned on and using water. It is recommended that Centeva update the sink faucets in their Logan, Utah bathrooms to faucets with automatic sensors that can save water by turning the flow of water off when the user's hands are not near the fixture (EPA, 2012). This hands-free option can also provide further health benefits, which are important in a post-COVID-19 world (EPA, 2012).

The Utah Plumbing Code, which aligns with the International Plumbing Code (IPC 2015), allows for up to 0.5 gpm (gallon per minute) rate of flow in restroom faucets and 2.2 gpm in commercial kitchens (UpCodes, 2020). Assuming the current faucets are to code, there are a few

water saving methods that can be implemented to reduce the water usage in both the bathrooms and kitchen areas.

The EPA reports that faucets in public-use bathrooms are used for 15-60 seconds per use and can be used 3-4 times a day per employee (EPA, 2012). Table 6, below, provides the water savings by switching to a 0.35 gpm automatic shutoff commercial faucet in the bathrooms:

	Faucet Flow (gpm)	Min. Est. Use (15 seconds water 3x/day per person) (EPA, 2012) (gallons)	Max. Est. Use (60 Seconds Water 4x/day per person) (EPA, 2012) (gallons)	Min Est. Water Use for all 24 Employees Per Year (gallons/year)	Max Est. Water Use for all 24 Employees Per Year (gallons/year)
Commercial Faucet	0.5	0.375	2	2241	11952
New Commercial Faucet with Automatic Sensor	0.35	0.2625	1.4	1569	8366
Water Savings	30%	0.1125	0.6	672	3586

Table 6: Estimated Water Use and Savings Between 0.5 gpm Faucet and 0.35 gpm Faucet

To combat the fact that automatic sensor faucets use the full water pressure, compared to a user turning a knob to a lower capacity, it is recommended Centeva also install a water-saving faucet aerator with a 0.5 gpm (gallon per minute) maximum volume in their bathroom and the two kitchen sinks at the Logan, Utah office. Aerators add air to the faucet water flow so that there is less water with the same pressure (Plumbing Supply, 2020). This can save 77% of the water used in the kitchen areas, they cost around \$3-6 each, and they are easy to install and maintain (Conservation Warehouse, 2020; Plumbing Supply, 2020).

Another potential initiative that Centeva will not be pursuing at this time is to update the toilets in the Logan, Utah office for a new WaterSense toilet. In the U.S. all toilets manufactured after 1994 are required to have 1.6 gallons per flush (gpf) (NCSL, 2015). When Centeva purchased the Logan, Utah offices in 2017 the toilets had all been updated for the sale. While the EPA’s WaterSense toilets have a 1.28 gpf, saving 20% more water per flush over the 1.6 gpf toilets, it is not recommended that Centeva update their toilets at this time due to the current rate of use and low cost of water in Logan, Utah. However, it is recommended that the toilets be assessed to ensure they are all using the correct 1.6 gpf diaphragm. A study of an office building in Tampa, Florida found that when the new 1.6 gpf toilets were installed the toilet flush valves had been fitted with 3.5 gpf diaphragms so each flush was still using 3.5 gpf (Gauley & Koeller, 2010).

Employee Water Conservation Program

Employees should be educated on the best ways to save water at the office. First, employees should report if there are any leaks or if the toilets or sinks are not working correctly (EPA, 2012). Catching leaks early can save water and costs associated with wasting it. Table 7, below, details the potential financial cost and water loss associated with leaks from a toilet and drip irrigation system.

Malfunction	Leaking Flow Rate (gallons per minute)	Water Loss	Estimated Cost of Water Loss (using Logan city and Power Comm services Calc)
Leaking Toilet	0.5 gpm	21,600 gallons per month	\$1,138.56 per year
Drip Irrigation Malfunction	1.0 gpm	43,200 gallons per month	\$2,277.12 per year

Table 7: "Potential Losses from Water Leaks" for Centeva's Logan, Utah office (EPA, 2020f)

And, signage should be placed in stalls/bathrooms to ensure only approved items are flushed as additional items may cause strain on the system (EPA, 2012).

Second, it is important to ensure that these automatic sensor faucets are cleaned thoroughly as they have more parts than a normal faucet (EPA, 2012). The on-site facilities manager should also check faucet aerators, automatic sensors, toilet fill-valves and diaphragm, water level, and water meters to ensure all is working properly, and if not, adjust as needed (EPA, 2012). The EPA has a yearly "Fix a Leak Week" event in March where they encourage home and business owners to check for leaks on an annual basis and use the information found to educate family and employees on how to detect leaks and to where to report them (EPA, 2020f).

Finally, it is recommended that Centeva post signage in the restrooms and kitchens to ensure employees are aware of their water efficiency goals (EPA, 2012). Along with signage where water will be used, it is recommended Centeva update their employee handbook to include a Water Conservation Policy message:

Suggested Policy description for the Centeva Employee Handbook:

It is the responsibility of all employees to help achieve Centeva's Water Goals. To that end, we ask that all employees do their part to follow guidance on water-efficiency

including only running dishwashers when full, turning off water at sinks when not in direct use, and communicate with management on any suggestions they have to reduce our water (or other resource) usage.

Recycling and Waste Management

“Print Local” Marketing Policy

Centeva’s Deputy Chief of Operations is often in charge of purchasing marketing materials for conferences and events. While she attempts to print these materials locally instead of printing them in the Utah offices and shipping them, it is recommended that a “Print Local” policy be put into place for marketing materials for all employees to follow this procedure. This would mean if materials are needed for a conference in Washington, D.C. that the materials are developed and submitted ahead of the event at a print location in D.C. close to the conference. Then, Centeva employees would be responsible for picking up the materials the day before or day-of the event to display and distribute. This will cut down not only on transportation costs, but also emissions generated from shipping. Centeva has also agreed to print all marketing materials on 100% recycled and recyclable materials, including business cards. See the “100% Recycled Paper Business Cards and Marketing” section for more details.

Centeva also prints training materials for one of their contracts at their South Jordan, Utah office and then ships them to Frederick, Maryland. They have agreed to discontinue this practice and instead implement a “Print Local” policy for their training materials as well. This will require that the instructor in the Frederick, Maryland area will utilize the Centeva Rockville office equipment to print and bind the training materials. This will cut back significantly on transportation costs and emissions as well. It is estimated that transporting the materials from Rockville to Frederick over a distance of 56 miles will create 0.08 metric tons of CO₂e in one year (assuming Centeva prints materials for 8 classes on separate occasions) (Carbon Footprint, 2020). If they printed these materials in the South Jordan, Utah office and shipped them to Frederick, Maryland it would cost about \$61 in shipping fees for each shipment, or \$488 per year (for 8 separate trainings) *and* it create one (1) metric ton CO₂e emissions (Carbon Footprint, 2020; FedEx, 2020; TerraPass, 2020). By printing locally, they cut emissions by 0.92 mt tons CO₂e and save nearly \$500 in shipping costs in one year.

Suggested Policy description for the Centeva Employee Handbook:

All Marketing materials must be approved before they are printed. They should be printed on 100% recycled paper at a location within 30 miles of the event the materials will be used.

All Training materials must be approved before they are printed. If it is necessary to print, they should be printed at a location within 30 miles of the event the materials will be used.

“Zero Print” Policy

For all other materials it is recommended that Centeva implement a “Zero Print” policy to cut back on paper waste. As an agile company, Centeva should be able to adjust to a “Zero Printing” policy with few caveats. Aiming for zero over “minimal” printing will encourage employees to aim higher and think through all printing to determine if it is necessary. This policy should include recommendations for alternative options, such as using electronic communication whenever possible, including the on-site television or projector, or personal computer screens (Strategic Sustainability Consulting, 2012). This may require the employee put more effort into preparing for meetings, by sending materials out to all attendees so they are able to view it on their personal devices if the screen is not within viewing distance of all meeting attendees, in the event of a large audience when there is not an auditorium available, for example (Sitarz, 2008). It is recommended that signage is placed around the office to remind employees of why it is important to refrain from printing. See **Appendix III** for an example.

If printing is necessary, IT should set up printing capabilities on all computers and printers to automatically print double-sided and in grayscale (Sitarz, 2008). Centeva should also purchase 100% recycled, Forest Stewardship Council certified paper, which ensures that the paper was harvested in a responsible manner and does not contribute to deforestation (Forest Stewardship Council, 2020).

Waste & Recycling Program

The EPA reports that in 2017 18.4 million tons (13.1%) of waste that was sent to landfills in the U.S. was paper and paperboard products (EPA, 2020d). Therefore, it is assumed there are

opportunities at Centeva to recycle paper and packaging. Logan City, the utility company at Centeva's Logan, Utah office, charges a flat fee for garbage and recycling. Centeva is charged for two 90-GAL trash cans that are picked once a week and for two 90-GAL recycling bins that are picked up every other week. This allows up to 720 GAL of waste to be landfilled and 360 GAL can be recycled each month if Centeva is using them to capacity. The cost of recycling is \$0.02 per GAL compared to \$0.04 per GAL for landfilling (Logan City, 2019a). A waste audit is recommended as a future endeavor to determine all of the waste, recycling and composting opportunities the garbage at the Logan, Utah office provides. In the meantime, even though Centeva may not be able to stop using one of the 90-GAL trash cans to save on these flat fees, they still need to maximize their recycling to ensure they are getting what they are paying for. Is Centeva taking full advantage of the lower cost of recycling compared to waste and using all 360 GAL per month? A study by O'Connor et al. (2010) found that recycling increased substantially when recycling bins were located "closer to the point of consumption," so it is recommended that if there are trashcans within offices or conference rooms, that there be a recycling bin immediately next to it to encourage recycling (O'Connor et al., 2010). It is also recommended that Centeva put a "Cache County Recycling" sign to ensure employees know which items can and cannot be recycled locally next to main trash can and recycling bins in main kitchen on 1st floor and on the front of the full-size and small soda refrigerator to grab the employee's attention as they are getting food and beverages out. Signage should also be placed in the secondary small kitchen on 2nd floor of their Logan, UT office, see **Appendix III** for details.

For Rockville and South Jordan office, although they do not get billed individually for municipal waste, it is still important to decrease our waste and increase recycling. It is recommended these locations also properly label recycling bins with acceptable items per local rules **see Appendix III**, place a recycling bin next to every trash can, and even if there are no trash cans, ensure that there are recycling bins available in offices and conference rooms.

To increase likelihood of recycling, Centeva will also be including recycling and waste as part of their new Change Management Program (see Fostering Sustainable Behavior section for details).

Electronic Waste Recycling Program

Centeva provides a laptop computer to almost every employee (others are loaned one from the government agency they support). After a few years these laptops have reached the end of their life with Centeva as they are no longer supporting productivity as needed. Storing this equipment costs Centeva valuable space and, therefore, it is recommended that Centeva implement the following plan for the laptops, monitors, and other computer equipment they no longer use. After an employee leaves employment with Centeva, or a computer is no longer usable as determined by Centeva IT staff, the computer will be sent to one of the two offices Rockville, MD or Logan, Utah (whichever is closest). Centeva should keep a set number of computers on hand for new employees and should only recycle a computer when IT determines it can no longer support Centeva workload. If it is still a usable computer, then the computer hardware should be cleared of information and it should be donated to local charities in Salt Lake City, Utah. Centeva's current charities include Women of the World, a women's refugee organization, and Spy Hop, a youth media program. Both organizations give laptops to disadvantaged individuals to complete their schooling or to assist with work-related needs (Council on Environmental Quality (CEQ), 2019; Sitarz, 2008). If the computer is not usable at all, then IT should ensure the computer parts are able to be used in other systems or recycled through either the computer manufacturer or retailer's websites, HP, Apple, Dell, etc. or if that is not feasible due to rules from the retailer, then IT should deliver it to the local electronic recycling with appropriate facilities, see **Appendix IV** for resources (CEQ, 2019; Sitarz, 2008; Strategic Sustainability Consulting, 2012).

Suggested Policy description for the Centeva Employee Handbook:

It is the responsibility of all employees to help achieve Centeva's Recycling and Waste Goals. To that end, we ask that all employees reduce their waste and follow guidance on what items can and cannot be recycled, ensure all office equipment, including laptops and printers are turned over to IT to recycle or refurbish once they're reached their end-of-life, and refrain from printing any documents unless absolutely necessary. Let's all do our part to cut back on using paper, plastic, and landfilling items that can be recycled.

100% Recycled Paper Business Cards and Marketing

Centeva only buys business cards for employees who go to customer meetings and develop business contacts. This already cuts down on the amount of business cards they purchase;

however, it is recommended for the business cards they do buy that they use 100% recycled paper. MOO, Inc. has recycled t-shirt fabric business cards that are only \$0.07 more per card compared to their original business cards (200 cards at \$79.96 vs 200 cards at \$94.99) (MOO, 2020a; MOO, 2020b). These cards are sustainable because they are not made from trees and instead utilize the circular economy instead of contributing to deforestation to generate new raw materials (MOO, 2020a; MOO, 2020b). These cards are also recyclable, further reducing Centeva’s carbon footprint (MOO, 2020a).

Transportation

Employee Surveys

In June 2020, the company performed a study of employees across the company to gauge how they felt about returning to the office versus working from home due to the COVID-19 virus. 75% of Centeva’s employees responded to the survey.

Employees were asked the following questions. Answers are provided under each question, and the answer with the highest response is in bold:

1. How are you feeling about working from home?
50% “Great”
21% “Good”
5% “Ok”
0% “Not Great”
2. Office locations - Rockville, Maryland, South Jordan, Utah, and Logan, Utah: Do you feel there is a need to work from the Centeva offices?
35% “Sometimes – availability for team meetings or ability to go in when needed”
23% “No”
14% “N/A – I work from a client location only”
3% “Majority of time”
0% “Yes”
3. Do you prefer to work from an office setting or telecommute?
44% “Ability to do both”
30% “Telecommute”
1% “Office”
4. Do you feel comfortable returning to an office setting?
33% “Maybe – with more time”

23% “Yes”
12% “No”
9% “Maybe - with added measures”

In July 2020, the consultant performed a study of employees at Centeva’s Rockville, Maryland office. This office was chosen as it has a large percentage of employees who may use the facility and has public transportation nearby. The respondents were asked to answer the questions about their commute to work as if they were no longer in quarantine and they were back to their normal work schedules. Employees were asked the following questions. The potential answers are shown after each question:

1. How far is your commute to the Centeva Rockville office? Please tell us in miles from your home to the office (in one direction).
Answer is open text
2. Are there options for you to use public transport from your home to the Centeva office? What are they? (Ex. Metro Red Line is 1 mi from my home).
Answer: open text
3. Question: How do you usually get to the Centeva office?
Answer is multiple choice: Car, bike, walk, metro, or bus
4. If you said "car" for question 3, we'd love to learn more about our employee commute greenhouse gas emissions. Can you tell us your car's make/model/year?
Answer: open text
5. If you said "car" for question 3, do you carpool? How many days a week?
Answer: open text
6. If there were more public transport options, would you use them?
Answer yes or no
7. How many days a week do you work out of the Centeva office
Answer is multiple choice: 1, 2, 3, 4, or 5
8. How many days a week do you work at a client's office?
Answer is multiple choice: 1, 2, 3, 4, or 5
9. How many days a week do you work from home?
Answer is multiple choice: 1, 2, 3, 4, or 5
10. If you go into a client's office, please tell us how you usually get there? For example, "I drive into the Centeva Rockville office first and then take metro to the client," or "I drive

directly from home to the client's office in DC," or "I take the red line from my house directly to the client's office in DC".

Answer: open text

11. How far is your commute to the client's office? Please tell us in miles (in one direction) and whether that is from your home or from the Centeva office to the client office.

Answer is open text

12. Are there options for you to use public transport to get to the client's office? What are they? (Ex. Metro Red Line is 1 mi from my home).

Answer: open text

13. Are there options for you to carpool to the client's office? For example, is it feasible to go into the Centeva office and then ride together? If not, why?

Answer: open text

The study was completed by 18 of the 26 employees located near this office, or 69%. The study found that 55% (10 of the 18) of the employees commuted to the Centeva Rockville office at some point each week, ranging from 1 to 5 days a week. They spend the rest of the week working at a client's office or at home. 30% (3 of 10) say they would take public transportation if it was available, yet 50% of those who commute to the Centeva office (27% of the total respondents) have public transport near their homes and only one employee uses it to go into the Centeva office. One employee has public transportation available for part of their commute; however, they stress that using this method would cause a longer commute than driving straight to the office.

88% (16 of the 18) respondents spend at least one day a week working from home.

83% (15 of the 18) respondents work at a client's office at least one day a week. 53% (8 of those 15), or 44% of the total respondents have public transport near their homes that they could use to get to the client's office; however, only one currently uses public transportation to do so (same employee who uses public transport to commute to the Centeva Rockville office). One respondent said although there is public transportation near them, it is in an area that is not very safe, and another said it would add too much time to the commute because it was not a straight shot. 86% of those (13/15) respondents who travel to a client's office at least one day a week

said it was a shorter commute to go straight from their home to the client's office, instead of going to the Rockville office first and then onto the client's offices.

Reduced Employee Commute & Business Travel Program

Due to the responses from both surveys, it is assumed that even if respondents had options to carpool (11 of the 13 said they did not) it would add more time to their commute to ride into Rockville first and then onto the client's office as those going to same client may not live near each other. For 20% of these (3/15) employees the client office and Rockville office are in completely different directions. It is not recommended that Centeva pursue carpooling options at this time.

However, there is potential to encourage employees to use the public transportation located near their homes. It is recommended that Centeva facilitate a discussion with their employees to determine what barriers there are to the employees using public transport, if they didn't include it in their survey response, and work together to determine incentives to use public transport. Some solutions to barriers may be that because the commute is longer when using public transport, Centeva offer employees using these to commute are allowed arrive later and leave later, which may positively affect the duration of the commute.

It is also recommended that Centeva establish a designated "Work-From-Home" day for the Rockville office employees. Many employees are required to be in a client office a specific day or number of days a week. A follow up survey may be necessary to determine which day is best for this group of employees to work from home each week. From this survey, Centeva could implement a mandatory telework day where the whole office is closed to cut back on their Scope 3 Category 7 "Employee Commute" emissions. Figure 11, below depicts the financial and non-financial benefits of teleworking including reduced commute times, less greenhouse gas emissions, higher productivity, and less hours lost (Waters, 2011):

FINANCIAL BENEFITS	NON-FINANCIAL BENEFITS
State specific reimbursement programs for start-up costs. These include up to \$20,000 in Georgia, and a 25 percent tax credit in Maryland.	Reduced emissions of CO ₂ , NOx, and VOCs associated with employee commuting.
Employees who telecommute 50 percent of the time save approximately \$2000 to \$6000 per year on commuter related costs (Lubber, 2008)	Employees who telecommute half of the time save 100 to 400 hours not spent in rush hour traffic (Green Business Network, 2005).
Reduced demand for on-site parking and associate parking maintenance costs.	Greater business agility—fewer work hours lost.
Reduced need for office space, and lower cleaning, electricity, and maintenance costs for an organization (Sun Microsystems, 2008).	Telecommuters are 20-40 percent more productive than conventional office workers (Montero, 2009).

Figure 11: Financial and Non-Financial Benefits of Telecommuter Program (Waters, 2011)

It is also recommended that Centeva continue to take advantage of lessons learned during the COVID-19 quarantine that reinforce employee work quantity and quality are not reduced because they are at home, and tools and resources are available to allow all employees to continue to provide excellent service and support to customers even when working from home (Strategic Sustainability Consulting, 2012). Centeva can establish a policy that limits business travel when not necessary. Many of Centeva’s customers include Contract Line Items for Travel in their contracts and Centeva management often travels for customer sales meetings, government conferences, yearly employee reviews, and employee social events. Before Centeva is able to determine what travel can be reduced, they must first begin tracking their current usage and then map out expected travel based on contracts and events. An example tool available to track this information is provided below in Figure 12, the “Business Transportation Carbon Footprint Worksheet” (Sitarz, 2008). Not only will this provide Centeva with a means of tracking employee commutes and business travel, but they can calculate emissions as part of their yearly greenhouse gas emissions reporting.

Business Transportation Carbon Footprint Worksheet					
Completed by:		Date:		Business:	
Address:			Phone:		
Company-Owned Vehicles					
Vehicle Make/Model/Year	MPG rating	Miles/month	Average gallons of fuel/month (Miles/mpg)	Carbon Footprint (lbs CO ₂) (# gallons x 25 lbs)	Alternatives
Total Company Vehicle Carbon Footprint					
Employee Commuting					
Vehicle Make/Model/Year	MPG rating	Miles/month	Average gallons of fuel/month (Miles/mpg)	Carbon Footprint (lbs CO ₂) (# gallons x 25 lbs)	Alternatives
Total Employee Commuting Carbon Footprint					
Company Air Travel					
Reason for travel	Round trip distance	Number of employees	Total person miles (# persons X miles)	Carbon Footprint (lbs CO ₂) (Person-miles X .5 lbs)	Carbon Offset?
Total Company Air Travel Carbon Footprint					
Company Shipping (In and Out-bound)					
Reason for shipping	Average trip distance	% of full load (in whole numbers)	Carrier	Carbon Footprint CO ₂ (Miles X 25 lbs X percent of full load—whole numbers)	Carbon Offset?
Total Company Shipping Carbon Footprint					
Total Monthly Travel & Transportation Carbon Footprint (Add all footprints)					
Total Annual Travel & Transportation Carbon Footprint (Multiply by 12)					
<small>Note: Your total company travel/transportation footprint is calculated in pounds of CO₂ equivalent and is based generally on the emissions methodology developed by the Carbon Trust. See www.carbontrust.co.uk for more details. Review and redo your calculations quarterly and work to implement methods that will lessen your overall business carbon footprint.</small>					

Figure 12: Business Transportation Carbon Footprint Worksheet (Sitarz, 2008)

Suggested Policy description for the Centeva Employee Handbook:

It is the responsibility of all employees to help achieve Centeva’s Employee Commute and Business Travel Goals. To assist in this endeavor, some offices will implement a mandatory “Work from Home” day, when available, to cut back on emissions and expenses encountered during commuting. As always, our contractual obligations must be considered; however, we are also encouraging employees utilize the digital business tools

and resources available that allow us to see and work with our coworkers and customers “face-to-face” and deliver customer excellence while removing unnecessary travel to the customer site. If you have any ideas on how to reduce employee commute and business travel, please let us know.

Fostering Sustainable Behavior

“The cornerstone of sustainability is behavior change”

-Doug McKenzie-Mohr (2008)

Change Management is not only part of the deliverables Centeva requested with their Sustainability Action Plan, it is also vital to the success of any sustainability program. Implementing the sustainability initiatives recommended in this plan will require an adjustment to strategy and operating procedures to embrace the Triple Bottom Line. All employees will need to be encouraged to assist Centeva in making sustainable, long-lasting changes that benefit people, planet, and profit.

The following sections go hand-in-hand with the sustainability initiatives recommended above and will assist Centeva in their new Sustainability Program:

- Vision of Sustainability
- Leadership Engagement
- Organizational Structure
- Communication and Marketing
- Educational Program

Vision of Sustainability

A common thread in Centeva’s management strategy is to look to examples from Jim Collin’s book *Good to Great*. Collins “Hedgehog Concept” introduces three intersecting circles: 1) what you are deeply passionate about, 2) what you can be the best in the world at, and 3) what best drives your economic or resource engine (Collins, 2020). At the center of these circles is the “Hedgehog” (Collins, 2020). Figure 13, below, shows how Centeva embraces the Hedgehog Concept:



Figure 13: Centeva's Hedgehog Concept (Centeva, 2019a)

Centeva understands that seeking greatness cannot occur unless everyone is engaged and passionate about their work. This ties in with the concept of sustainability. Sustainability is not just about reducing a company’s impact on the environment; it is about creating a positive work environment and ensuring employees find joy in the work they do. Job satisfaction makes employees more productive and prone to innovate, driving efficiency and making the company stronger (Casey & Sieber, 2016; Gast et al., 2020; Peters, 2019). When employees have what they need to do their jobs well, they can pass that efficiency and innovation onto their customers, increasing Centeva’s reputation and with both employees and customers. This further drives Centeva’s “economic engine” (Collins, 2020). Job satisfaction can come from working in a field that supports their skillset and passions and from working for a company who shares the same values they do. Positive work environments also show decreased health care costs, decreased employee turnover, and increased engagement, which reduces costs from absenteeism, accidents, and errors (Seppälä & Cameron, 2015).

Sustainability also means earning a “license to operate” in the communities in which they exist (Porter & Kramer, 2011). By hiring locally, seeking out local renewable energy options, providing wellness education programs to employees, ensuring employee satisfaction, and reducing the company’s reliance on finite resources, Centeva is investing in the economy, society, and environments around them and creating shared value (Porter & Kramer, 2011).

Centeva’s vision of the future is to provide “*Customer Excellence through Service Excellence.*” Centeva is encouraged to rethink their company values of “Integrity, Quality, Innovation, and Excellence” to not just include what Centeva provides for its customers, but also what Centeva embodies for its employees. By connecting sustainability with their purpose, Centeva can extend their mission “*Customer Excellence through Service Excellence*” to mean “*Empowered Employees Making A Positive Change on the World, One Client at a Time.*”

This new vision helps Centeva focus on their largest asset, their human capital, which includes employees, clients, and the communities in which they work in.

Leadership Engagement

Support from the executive team is paramount to the success of the Sustainability Action Plan (Anand & Barsoux, 2017; Kotter, 2005). Without buy-in from leadership, it is difficult to instigate a sense of urgency within the staff to take action and acquire the resources needed to implement all of the initiatives (Kotter, 2005). Leadership also provides the space to communicate and engage with stakeholders on the initiatives, goals, success stories, and next steps that ensure the program thrives. This collaboration and learning with others are key to creating value (Eccles et al., 2012).

Leaders of successful sustainability programs also help drive change by taking a long-term view and understanding that “transformational change requires taking on a large number of smaller scale change initiatives” compared to implementing only a few small changes because the business case for sustainability merits Centeva begin transforming themselves into a sustainable company from the top-down and bottom-up (Eccles et al., 2012, p. 46).

Organizational Structure in Support of Sustainability

In order to implement sustainability initiatives, many companies hire a Sustainability Manager and create a “Green Team” to facilitate changes in the Sustainability Action Plan, address and remove barriers to implementation, educate employees, monitor and report on progress, and communicate with stakeholders on initiatives, pain points, and success stories.

Sustainability Manager

It is recommended Centeva promote or hire a part-time Sustainability Manager who would be responsible for implementing the Sustainability Action Plan and can take on responsibility of being the Centeva Energy Manager and Sustainability Program educator. The Sustainability Manager would report to the Deputy Chief of Operations.

In order to keep an eye on the triple bottom line (people, planet, and profit), it is also recommended that the Sustainability Manager take over responsibilities of the Centeva Foundation events to provide a more cohesive company-wide approach to social endeavors and attack issues with a cohesive and consistent agenda. Listed below are some of the Sustainability Manager's responsibilities and core competencies.

Specific Responsibilities:

- Lead Centeva's sustainability efforts
- Develop strategy in partnership with Centeva's Sustainability Committee and deliver action on it
- Create and implement communications plan to inspire internal action and external engagement
- Develop and deliver internal Sustainability training
- Develop and facilitate ongoing Employee Development training
- Develop and facilitate an Employee Health & Wellness Program to include mental, physical and emotional health topics
- Influence and achieve cross-functional ownership towards sustainability goals
- Secure cross-functional alignment on key metrics and maintain timely reporting mechanisms/dashboards
- Represent Centeva at sustainability events
- Represent Centeva's sustainable efforts at other sales/marketing events
- Educate Centeva's new hires and employees on sustainability initiatives during onboarding and beyond

Core Competencies & Accomplishments:

- Experience in sustainability strategy and execution, project management, analysis, partner management, cross-functional achievements
- Sustainability content knowledge
- Excellent communicator, able to cast a vision and use data to inspire and empower others to take action
- Proven track record creating successful internal and external communication strategies for diverse audiences

- Strong ability to lead across multiple topics without losing sight of the big picture
- Excellent technical and quantitative skills (data driven, fluent with Excel)
- Passion for “business for good” and vision for how Centeva could lead on sustainability
- A strategic, can-do positive attitude with a creative, action-oriented approach (Sephora, 2020)

Sustainability Committee

It is recommended that Centeva create a cross-functional Sustainability Committee who would act as the “Green Team.” They would be responsible for driving Centeva’s sustainability initiatives internally under the guidance of the Sustainability Manager.

A Green-Team Toolkit has been included in **Appendix II**, which includes the Sustainability Committee Job Description, Meeting Agenda, Project Kick-Off email/memo, Event Tracking Table, Energy Star “Green Team Checklist,” and Energy Star “Bring Your Green to Work” cubicle poster (Energy Star, 2016c; Strategic Sustainability Consulting, 2012). These tools will be valuable to ensure the Centeva Sustainability Committee has the materials they need to get started and implement the Sustainability Action Plan.

The Sustainability Committee should be made of “well known and well respected” people (McKenzie-Mohr, n.d.). This will increase their impact and success rate of coordinating and introducing the requested behavior changes (Anand & Barsoux, 2017; McKenzie-Mohr, n.d.).

Based on discussions with Ms. Quan, the following employees are recommended for the Sustainability Committee:

1. Annie Quan, Deputy COO & Director of Business Development
2. Loren Audette, Sustainability Action Plan creator
3. Jonah Harmon, Facilities Manager at Logan, Utah office
4. Skye Emerson, Director of Marketing and HR Team Member
5. Nate Hoffman, Products Team Member
6. Jonathan Fil, Business Development Team Member
7. Any additional employees who volunteer to participate. All job descriptions and locations are eligible (developer, business analyst, project manager, etc.)

The Sustainability Committee will conduct monthly meetings to assess project status, discuss next steps, and gather and distribute information. As part of implementing and driving the sustainability initiatives, they can utilize lessons from Community-Based Social Marketing (CBSM) developed by Doug McKenzie-Mohr, which introduces strategies that can help Centeva to promote sustainable behaviors in their employees. These are necessary in order to ensure the plan is successful as there are many barriers to getting employees to follow through on recommended initiatives, including lack of motivation, forgetting to act, lack of social pressure, lack of knowledge, and structural barriers (McKenzie-Mohr & Smith, 1999).

The CBSM checklist includes the following:

- Convenience – reducing or removing barriers to that hinder “good” behavior
- Commitment – ask for employees to be involved and make a commitment
- Social Norms – leaders making “good” behavior appear normal/commonplace
- Social Diffusion – using social interactions to spread this “good” behavior
- Prompts – signage and other tools to encourage and remind people to act
- Communication – provide effective communication and messaging to reinforce benefits of the “good” behavior
- Incentives – financial and non-financial benefits to encourage the “good” behavior (Fond du Lac Environmental Program, 2016)

Table 8, below, provides further detail on generic activities Centeva can engage in to accomplish the Community-Based Social Marketing strategies:

Strategy Design Checklist	
Strategy for Overcoming Barriers	Strategy Checklist Theme: Be clear, be public, be positive!
Convenience	<p>Make sure target audience understands exactly what to do</p> <p>Make the desired behavior easy to perform</p> <p>Make the desired behavior the default choice.</p>
Commitments	<p>Must be voluntary! Avoid a hard sell at all costs!</p> <p>Ask for a small commitment first, then ask for a larger commitment i.e. help set up chairs for meeting or pass out flyers before asking for a signed commitment.</p> <p>Visit each pledge afterwards, ask how the commitment is going.</p>
Social Norming	<p>Make the activity supporting the target behavior noticeable.</p> <p>Model desired behavior in a positive way in support of the target behavior, rather than avoiding a negative outcome.</p> <p>Use graphics that show progress towards the goal where target audience will see them frequently i.e. lobby, cafeteria, breakrooms, restrooms and in work area "gathering spots".</p>
Social Diffusion	<p>Ask Sustainability Committee and early adopters to talk with others about how easy and beneficial using the desired behavior is for them.</p> <p>Create an energy dashboard to share progress and benefits using metrics such as % energy saved, GHG emissions reduced.</p> <p>Provide feedback to individuals and groups on progress, and other new tips for making the targeted behavior easier.</p>
Incentives	<p>Pair the incentive to the behavior. If staff is giving up a personal printer, have a drawing for print/copier service and delivery from volunteers.</p> <p>Prepare for those who find disincentives to avoid desired behavior i.e., staff disabling occupancy sensors.</p> <p>Consider size of incentive and whether it should be monetary. Often recognition and praise for positive behavior is an effective incentive.</p>
Prompts	<p>Choose prompt that are succinct and specific. "Turn off APS before lunch breaks!"</p> <p>Make prompts eye-catching.</p> <p>Place prompt as close in time and location to desired behavior i.e., stickers next to light switches, on monitors, coffee makers, etc.</p> <p>Prompt should always be positive in language. Avoid using negative words such as "Don't forget to...!"</p>
Communication	<p>Frame your message to indicate what the individual is losing by not acting, rather than what they save by doing the desired behavior. People are motivated to act by what they are missing out on.</p> <p>Use as many channels as possible i.e. social media, posters, newsletters, local media. Report progress and praise success.</p> <p>Hold virtual and in-person energy efficiency workshops.</p> <p>Use surveys and focus groups to brainstorm additional ways to overcome barriers and to help staff identify as being part of the solution.</p>

Table 8: Example of McKenzie-Mohr's Strategy Design Checklist

Table 9, below, provides an example of how these barriers and strategies come into play for a Sustainability Initiative to have employees turn off all lights and equipment in conference rooms after meetings are concluded:

Fostering Sustainable Behavior Example	
Target Behavior: Turning off lights and electrical equipment in Conference/Meeting Rooms	
Barrier	Strategy
Structural	Convenience
Time: Everyone is rushed, all the time.	"End of Meeting" Time Out, meeting leader leaves 5 minutes at end of meetings for attendees to transition to leaving the room.
Lack of consistency in Lighting & Electrical Equipment	Use same lighting controls/electrical equipment in all meeting rooms.
Lack of Motivation	Commitments
Behavior is more likely to change if it is personally relevant to staff	Meeting leader asks for volunteer to turn off lights/equipment
Ask staffers to do a small thing, then they are more likely to see themselves committed	Volunteer name is included in agenda and meeting minutes
External behavior needs to match personal view of self	Meeting leader asks group for small request for help, i.e. push in chairs, sign b-day card for group member.
	Meeting leaders asks group for larger request, i.e. sign pledge to turn off lights/equipment at every meeting, continue conversations outside room.
	Incentives
	Volunteers get recognition from group and a gift card as a thank you.
	Social Norming
	Meeting leaders ask key attendees prior to meeting to remind group at end of meeting
	Meeting leaders model behavior by turning off lights and equipment at end of meeting for first month.
	Meeting leaders ask two attendees to remind stragglers to continue conversation outside of room so that lights can be shut off.
	Stragglers see people leaving meeting promptly
Forgetting to Act	Prompts
It takes many reminders over a sustained time period to establish a new habit.	Stickers on light panel, on door, on equipment.
	Reminder at end of the meeting, in the meeting minutes, and meeting agenda.
	Reminder can be verbal or a graphic included in meeting minutes.
Lack of Social Pressure	Social Norms
	Group sees other attendees ending conversations, leaving meeting promptly, turning out lights/equipment.
	Majority of attendees take ownership of helping each other comply with pledge.
Lack of Knowledge	Communication
	Invite Sustainability Committee to give presentation on energy efficiency initiatives at Centeva, explain impact of leaving lights and equipment on.
	Local Sustainability Committee staff attends meeting, shows how to turn on and off all lighting and electrical equipment, leaves cheat sheet in room for the group to use for future meetings.
	Every interaction between Sustainability Committee staff and other staff is a teachable energy efficiency moment.

Table 9: Example of McKenzie-Mohr's Strategy Tools to Foster Sustainable Behavior

The Sustainability Committee, along with Centeva Executive Leadership, are encouraged to provide incentives as positive reinforcement to exhibiting good behaviors that drive Centeva's sustainability initiatives. Through incentives, Centeva can also make their "purpose" more personal with their employees, driving further engagement (Gast et al., 2020). Some financial and non-financial incentives include:

- Charitable donations by the employer on behalf of the employee
- Company-sponsored meal (for a team)
- Courtesy paid time off (PTO), for example, offer "59 minutes" which is an incentive provided to government employees allowing them to leave work an hour early
- PTO to participate in a community service or charity of their choosing
- Award ceremonies in which teams receive plaques for recognition
- Certificates of exceptional performance from the executive level
- "Shout-outs" in internal Centeva publications
- Letters of praise to recognize outstanding work copied to senior managers
- Peer nominated recognition in the form of certificates or letters
- Recognition at company-wide meetings or conferences (Strategic Sustainability Consulting, 2012)

Suggested Policy description for the Centeva Employee Handbook:

Centeva's Sustainability Committee is made of employees from all departments who volunteer their time and expertise to drive Centeva's Sustainability Initiatives. They provide internal education and change management programs, monitor and report on the progress of our energy, waste, and water goals, and help guide Centeva's policies while keeping the Triple Bottom Line, People, Planet, and Profit, in mind. All employees are eligible and encouraged to join our Sustainability Committee.

Communication & Marketing

To increase awareness of the sustainability initiatives, it is recommended that Centeva promote them to both internal and external stakeholders. This increases transparency, allowing Centeva to report on the goals they have achieved and are working, engage staff on the many ways they can participate, and give credit to those who helped them achieve their goals.

Centeva has several ways that they can promote sustainability and engage stakeholders, including during the hiring and onboarding stages; through their internal communication tool, Unite.ly; on their website, <https://Centeva.com>; through social media, including LinkedIn <https://www.linkedin.com/company/centeva/>; through their digital and paper marketing material; and customer sales meetings.

Internal Communication

- **Hiring** – include Sustainability goals in advertisements and during interviews and when speaking to potential hires– **See Appendix I**. Employees are also encouraged to discuss Centeva’s achievements with friends they refer to the company.
- **Onboarding** – debrief all new hires on values and goals and how they can contribute
- **Unite.ly** – internal tool to post and share information, including praise for employees who help Centeva meet their sustainability goals
- **Management Meetings** – keep all Project Managers, Executives, Team Leads, and other managers aware of progress and opportunities
- **Yearly Employee Satisfaction Surveys** - by conducting yearly surveys, Centeva can develop internal programs to ensure they are cultivating a happy, successful workforce who want to learn and grow with Centeva in the long-term. This is also an opportunity to gauge if employees are aware of and engaged in any of the sustainability initiatives. This information is valuable to the success of these programs.
- **Sustainability Report** – gather data and communicate Centeva’s Sustainability “Success Story” in a comprehensive report that includes goals and KPIs with employees
- **Educational Programs**
 - **All Hands Meetings** – the Sustainability Manager or Sustainability Committee can provide a “Tips and Tricks” at these monthly meetings. Example topics include, “Recycling Dos & Don’ts” and “Saving Money by Switching to LEDs”
 - **Professional Development** training – Centeva can begin providing skills training that would benefit the entire workforce. Topics include:
 - “Critical Thinking”
 - “Sustainability as Risk Management”
 - “Unconscious Bias when hiring, training, managing, and promoting”

- **Personal Development** training – the Sustainability Manager and Sustainability Committee can organize and facilitate a Health & Wellness Series with guest speakers. Topics include:
 - “Mindfulness”
 - “Emotional Intelligence”
 - “Sustainability for the Home & Office”
 - For example, Figure 14, below provides the EPA’s Energy Star’s Program’s “Bring Your Green to Work” education series email invitation:



LEARN MORE AT
energystar.gov

Bring Your GREEN TO WORK

with ENERGY STAR®



Dear COMPANY/ORGANIZATION NAME ASSOCIATE/EMPLOYEE/STAFF MEMBER,

Many of us are already taking steps to be greener at home by choosing energy-efficient lighting, appliances, electronics, and heating and cooling systems. But what about going green...at work? Did you know that the energy we use during a typical day at work causes more than twice as many greenhouse gas emissions as driving to and from work?

At <ORGANIZATION>, we've made a commitment to reduce our organization's environmental footprint. You are an important part of that commitment. Join us at <TIME on DAY, MONTH X, in LOCATION> for a 40-minute brown bag session to find out how we can save energy, save money, and fight climate change when we "bring our green to work." ENERGY STAR®, the U.S. Environmental Protection Agency's program for superior energy efficiency, will show us how.

WHY YOU SHOULD ATTEND:

Saving energy not only helps protect the environment, it also saves money that can be spent on equipment, salaries, and other benefits. Did you know that the average office building wastes 30% of the energy it consumes? It's easy to eliminate that waste, and the associated greenhouse gas emissions, once you know which easy steps to take.

YOU WILL LEARN:

- How buildings use energy (non-technical version!)
- How buildings waste energy
- Why buildings are so important in the fight against climate change
- Five easy steps you can take at work to save energy
- What you can do at home to save energy and money
- What our organization is doing on a larger scale to save energy and fight climate change

Small steps can make a big difference. And you can help! Let's "bring our green to work!"

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Figure 14: Energy Star's "Bring Your Green to Work" Email Template (Energy Star, 2008)

External Communication

- **Sustainability Report** – before reporting sustainability endeavors externally, first prepare and report Centeva’s Sustainability “Success Story” in a comprehensive report internally with employees for at least one year
- **Centeva Blog** – Centeva is launching an updated website in the near future where they will publish articles by Centeva’s Subject Matter Experts (SME) and those articles will then be pushed to Centeva’s LinkedIn account. Centeva can keep track of articles that are liked and shared and continue to provide popular content.
- **Marketing Material** - digital and printed material that is shared with potential customers at conferences, for example, the National Contract Management Association (NCMA).
- **Responses to Solicitations** – update response to include Centeva’s Sustainability achievements that benefit customers
- **Contract Kick-Off Meetings** – discuss sustainability initiatives with customers when applicable to contract deliverables
- **Discussions with our COR and CO/CS** – discuss sustainability initiatives when addressing the benefits of working with Centeva

Sustainability Capital Reserve

Sustainability projects requiring capital can be self-funded by establishing a Sustainability Capital Reserve (SCR) on the organization’s balance sheet. Savings resulting from implementation of the recommended initiatives can be captured and set aside as a rotating pool of capital to fund sustainability projects. The SCR also enables management to view easily the financial impact of implementing the sustainability initiatives.

Performance Metrics & Reporting

Performance metrics are important for all aspects of business, as they allow for companies to track progress towards goals and report on the results of initiatives both internally and externally.

It is recommended that Centeva begin tracking and reporting on the following goals:

- 100% of Centeva’s computers are enabled for sleep mode to decrease energy usage when not in use
- Set a goal for a % Reduction in Energy Use
 - Go beyond decreases found from moving the server to the cloud
- 100% of lightbulbs are LED
- 100% of paper and plastic beverage containers are recycled

- Continue to provide and use 100% reusable or compostable utensils for office kitchen (mugs, glasses, silverware, plates)
- 100% recycled paper in marketing materials
- 100% of all trashcans will be accompanied by a recycling bin
- 100% of appliances are Energy Star rated

While some issues are more abstract and will require qualitative story-telling, others will benefit from reporting results as a quantitative amount which can be benchmarked and tracked to convey the impact they are making on Centeva’s triple bottom line: environmental (planet), social (people), and economic (profit) (Farver, 2013). In addition to the metrics listed above, it is recommended Centeva begin monitoring and tracking the “Key Performance Indicators” (KPIs) in Table 10, below:

Environmental		
Priorities	Metrics	Results
Emission Reductions (Office Space)	Scope 2 Greenhouse Gas Emissions (mt CO ₂ e)	Aim for a decrease through employee training to empower them and improve efficiencies. Could be reported as emissions per employee to allow for them to grow, but still manage this metric. Use “mt CO ₂ e” to match standard unit reported by EPA (EPA, 2017a).
Electricity Makeup	% Renewable Energy used	Aim to continually increase renewables compared to non-renewables, which will also help with Emissions Reductions goals.
Waste Diversion	% of waste recycled or composted	Aim for increase through employee training and partnering with landlords. Can be reported by region or as a company (Walmart, 2020a).
Paper reduction	# of sheets avoided/trees saved	Report number of sheets avoided through policies to reduce paper usage (not just printing, but buying paper in general) as an equivalent to “trees saved” or “emissions avoided.” Use data from office purchases to keep track.
Social		
Priorities	Metrics	Results
Employee Makeup (Race)	% of employees at low, medium, and high levels that are minority	Aim to increase through evaluating hiring criteria to ensure there is no bias and provide “Unconscious Bias” training to all employees through the Professional Development Program.
Employee Makeup (Gender)	% of employees at low, medium, and high levels that are women	Aim to increase through evaluating hiring criteria to ensure there is no bias and providing “Unconscious Bias” training to all employees through the Professional Development Program. Goal should be set at 50%.

Employee Satisfaction	Score on several key indicators	This should be an annual report with the goal of 100% employee participation. It should be measured on several satisfaction factors including compensation, benefits (insurance, time off, etc.), does the employee feel respected, does the employee feel supported, do they feel they have the ability to pursue their passion, ability to engage with community through Centeva events, etc. with the goal of determining if there are programs in place to help employees, which programs need improvement and which are succeeding.
Employee Training	# of employees	How many employees have completed for each training area, including any job skill training? Some trainings will be completed each year, such as “Code of Ethics,” “Unconscious Bias,” and “Data and IT Security Practices.”
Community Training	# of people impacted	How many people did Centeva provide training to, this could be community outreach, working in schools and colleges, etc.

Table 10: Centeva's Key Performance Indicators

Recommendations: Future Initiatives

Centeva Sustainability Consulting Practice:

Once Centeva has successfully implemented sustainability initiatives, prepared and communicated their Sustainability Report with internal and external stakeholders, and have developed a sustainability consulting practice business plan, they can leverage their expertise in new markets by producing Sustainability Action Plans for new and existing clients.

Additional Initiatives:

- a. Full “Greenhouse Gas Inventory” for Scope 1, 2, and 3 using employee commuting, business travel, and energy use
- b. Goals and plan to reduce GHG emissions
 - i. For example, Scope 3 Greenhouse Gas Emissions (mt CO2 e) can be reduced through employee training, offering commuting options, and strategic changes to employee business travel
- c. Professional Development – include Sustainability goals in manager & employee yearly reviews and integrate Sustainability into “Pathway to Partnership” plan (for projects with ROI of 1-3 years)
- d. Sustainable “swag” (giveaways at conferences)
- e. Stop using business cards – utilize electronic alternatives
- f. Policy for Centeva’s leased buildings – Only lease a workspace if it has LEED and/or Energy Star certifications to ensure building efficiency. If not available, look for lease

- where Centeva has opportunities to capture and manage resource use instead of relying on landlord to manage.
- g. Centeva SME Articles/Blog - Posted on website (new site launching soon!) and then pushed to Linked In (in the works)
 - h. Professional “Energy Audit” at Logan office – include energy leaks in windows, walls, basement, etc. and recommendations on where to save energy
 - i. Installation of a building energy management system that allows for remote lighting, equipment power, and temperature changes
 - j. Assess supplies purchased for offices to cut back on packaging
 - i. In 2017, 29.9% of all MSW was containers and packaging which are immediately thrown out (EPA, 2020e).
 - k. “Waste Audit” at Logan, Utah office to determine what they are throwing out and how they can improve
 - i. Logan City charges a flat fee for waste and recycling each month. Centeva is charged for two 90-GAL trash cans that are picked up each week and two 90-GAL recycling bins that are picked up every other week. This allows up to 720 GAL of waste to be landfilled and 360 GAL can be recycled each month. However, the cost of recycling is \$0.02 per GAL compared to \$0.04 per GAL for landfilling. Is Centeva taking full advantage of the lower cost of recycling compared to waste and using all 360 GAL per month?
 - l. Get Logan, Utah office “Energy Star” certification
 - m. Look into green roofing options at Logan, Utah office
 - i. Department of Energy has a “Cool Roof Calculator” (Oak Ridge National Laboratory, 2020)
 - n. “Open Talent Market” –
 - i. Allows for Centeva employees to connect and work on additional projects to assist other teams in providing customer excellence.
 - ii. Also allows Centeva employees to see what kind of jobs are out there in the company for lateral and promotional changes
 - iii. See Schneider Electric article <https://business.linkedin.com/talent-solutions/blog/internal-mobility/2020/schneider-electric-internal-mobility>
 - o. Design Centeva products with sustainability in mind, using less materials and resources and aiming for zero waste and zero emissions when possible
 - p. Implement a “Composting Program”
 - i. “About 75% of food that could be composted ended up in landfills” (EPA, 2019)

Roadmap

Project	Activity	2020						2021												
		July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	
Sustainability Action Plan	Presentation to Executive Team																			
	Client Satisfaction Survey																			
	Executive Team Buy-in to Move Forward with Initiatives																			
	Present at All-Hands																			
100 % Recycled Marketing Material	Implement Initiative - Approval																			
	Roll Out to Staff																			
	Follow up - Remind Staff about Policies & Progress (Quarterly)																			
100 % Recycled Business Cards	Implement Initiative - Approval																			
	Roll Out to Staff																			
	Follow up - Remind Staff about Policies & Progress (Quarterly)																			
"Print Local" Policy	Implement Initiative - Approval																			
	Roll Out to Staff																			
	Follow up - Remind Staff about Policies & Progress (Quarterly)																			
Solar Panels at Logan, UT Office	Solicit for Proposals																			
	Receive and Review Proposals																			
	Select Best Value based on Cloud Server Decision																			
	Begin Logan City Permitting Process																			
	Installation of Solar Panels ***Must Install by December as Tax Credit decreased from 26% to 22%***																			
Sustainability Committee	Establish and Roll out to Suggested Team Members																			
	Roll Out to all Centeva Employees to Volunteer																			
	Meeting (Monthly) Sustainability Committee Develops 360 Wellness Training to present Quarterly																			
Cloud-Based Server	Get Approval to Migrate																			
	Work with IT and Plan for Migration																			
	Research Companies																			
	Select Best Value																			
	Migration																			
Personal Development	Present 1st Sustainability Tips & Tricks at All-Hands																			
	Present 1st and subsequent quarterly 360 Wellness Trainings																			
Hiring	Update Centeva Job Advertisement Language to include Sustainability																			
	Publish Updated Centeva Job Advertisement																			
	Determine additional "Sustainability Culture" questions for Interviews																			
	Roll Out use of new "Sustainability Culture" questions																			
Onboarding	Create new Onboarding Material for New Employees, including Centeva Handbook and Sustainability Initiatives and Policies																			
	Train Managers on New Onboarding Material																			
	Roll Out Use of New Onboarding Material to all New Hires																			
Key Performance Indicators	Upload Utility Data to Portfolio Manager (2018-2019)																			
	Continue to Upload Utility Data (Quarterly)																			
	Begin Tracking and Report Usage to Stakeholders (Previous Quarter) - Are we meeting our goals? What needs to be adjusted to stay on path to achieve goals?																			
	Begin Benchmarking Using Portfolio Manager Tool																			
Employee Commute	Implement Initiative - Approval																			
	Roll out Mandatory Telework Day Each Week (after return from Quarantine)																			

Table 11: Centeva Sustainability Action Plan Roadmap 2020-2021

Glossary of Terms

Abbreviation, Word, or Phrase	Description	Definition
COR	Contracting Officer's Representative	CORs “play a critical role in ensuring that contractors meet the commitment of their contracts. They facilitate proper development of requirements and assist Contracting Officers in developing and managing their contracts” (U.S. Federal Acquisition Institute, 2020).
CO/CS	Contracting Officer/ Contract Specialist	The contracts Centeva has with U.S. government agencies are worked on and awarded by Contracting Officers and Contract Specialists. These individuals “act as business partners to Program Managers in their Agencies, assisting them in planning for and acquiring the goods and services needed so that Agencies can accomplish their mission” (Veterans Affairs Acquisition Academy, 2018).
Employer of Choice		A company’s “ability to attract and retain the best candidates with a desirable company culture, leadership style, and employee engagement” beyond employee salary and financial benefits (Haddon, 2020).
ESG	Environmental, Social, Governance	Environmental, social and governance (ESG) data is reported by companies detailing how they manage the effects on the environment; what activities they perform as part of their social responsibility with employees, consumers, and the vendors they work with; and how they govern themselves, do they use internal controls? Is the board separate from executive team? (Chen, 2020). This information is valuable to investors, as it can help them “find companies with values that match their own” (Chen, 2020).
kGAL	Kilogallons	A unit of volume equivalent to a thousand gallons.
kWh	Kilowatt-hour	A measure of electrical energy used over time “equivalent to a single 1000 watt (1 kW) device used continually for 1 hour” (Sendy, 2019).
kW	Kilowatt	A measure of power “that represents the electrical peak draw of an appliance” (Sendy, 2019).
mt CO ₂ e	Metric ton Carbon Dioxide Equivalent	“Carbon dioxide equivalent or CO ₂ e means the number of metric tons of CO ₂ emissions with the same global warming potential as one metric ton of another greenhouse gas, and is calculated using Equation A-1 in 40 CFR Part 98” (EPA, n.d.).

Triple Bottom Line		A term meant to go beyond capitalism and “examine a company’s social, environment, and economic impact” or what they do to add value or destroy these areas (Kraaijenbrink, 2019). Also defined as People, Planet, and Profit.
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Appendix I: Hiring Toolkit

Sample Generic Centeva Business Analyst Job Advertisement

Centeva

In a world that continues to evolve at an ever-increasing rate, many Federal agencies are faced with problems and challenges they've never seen before. To modern leadership, the exceptional weight of the mantle of decision has never felt heavier than it does now.

At times, Federal Acquisition feels like rough rapids, and if not navigated carefully, could spell disaster for many mission-critical objectives. The Federal Agencies of today turn to Centeva to rise above the turbulence and commotion of an industry in constant flux.

A woman and minority-owned small business, Centeva is nestled high in the mountains of Salt Lake City, Utah, the birthplace of agile development, and provides excellent, innovative, solutions to Federal agencies.

We believe in cultivating an inclusive, diverse, empowered team to deliver “*Customer Excellence through Service Excellence.*” our talented, passionate employees seek to use innovation and creativity to transform our clients and the world for the better and make a positive impact on the world. Check out our “Sustainability” page on our website to learn more.

Job Summary

Business Analyst sought to work with our Federal Government client in [location]. The focus of this position is the user support and training of the federal agency's contract management system. An analytical mindset, previous Business Analyst experience, and the ability to provide superior client service and support is critical for success in this role.

Duties and Responsibilities:

- Resolve issues/ help desk support
 - Facilitate end-user training and support
 - Respond to Data calls
- Business process analysis and improvement
 - Lead change management efforts
 - Assess “As Is” and “To Be” processes and documenting gaps
 - Define project scope with client input
 - Understand and create solutions to improve user experience
- Interaction with Stakeholders
 - Support organizational Change Management
 - Collaborate to elicit new products and improve existing solutions
- Program management documentation support
- Risk and issue management support
- Participate in customer and team meetings
- Help Centeva deliver on our sustainability goals, through professional and personal development training, and through personal agency.

Information to provide during interviews (values)

- Discuss Centeva’s background as a women-owned, management consulting firm.
- Discuss Centeva’s mission, including our latest endeavor to reduce our impact on environment and cultivate an inclusive, diverse culture where our employees can flourish.
- Discuss job they are interviewing for.

Recommended Value-Based Interview Questions

1. What kind of working environment do you perform best in?

Then, the interviewer can reiterate Centeva’s goal creating an inclusive environment of support and belonging through engagement and empowerment.

2. What motivates you?

This can help Centeva gauge the employee’s value system and see if it aligns with ours.

3. What is your interpretation of “success”? What are your standards of success in your job? Employees should be aware of how to be successful at our jobs. Centeva provides yearly reviews, but employees are encouraged to receive feedback from our direct supervisor more frequently. Centeva prefers to promote from within and we offer personal and professional development training to help our employees flourish and grow.

4. What continuous improvement methodologies are you familiar with? Tell us about your experience.

Centeva is known for our business process improvement. We encourage all employees to keep our eyes and ears open for opportunities to help our customers and Centeva as a whole to be more effective and efficient. For example, our Sustainability Committee was created to help design and implement our sustainability initiatives and help employees to meet our goals through educational workshops and development opportunities.

(“Competency & Values-Based Interview Questions,” 2020)

Appendix II: Sustainability Committee (Green Team) Toolkit

Includes:

- Employee Invitation to join Sustainability Committee
- Sustainability Committee Job Description
- Sustainability Committee Meeting Agenda
- Project Kick-Off email/memo
- Sustainability Committee Event Tracking Table
- EPA Energy Star “Green Team Checklist” (Energy Star, 2016a)
- Bring Your Green to Work: Cubicle poster (Energy Star, 2016c):
- Example “Don’t Forget to Turn Me Off” signage for light switches (when not automatic)

Join Our Green Team!



- ***Help our organization become environmentally-friendly***
- ***Use your creativity and strategic thinking to turn our everyday practices and processes into sustainable ones***
- ***Teach others throughout the organization about eco-conscious practices***
- ***Make a difference and an impact!***

Insert contact information and/or ways to join the team here.

Green Team Member Job Description

Job Summary

The Green Team Members are responsible for helping the team design and implement the green initiatives within the organization. Green Team Members should model accepted eco-conscious behaviors and will serve as program boosters in their departments, helping maintain interest, relay communication, and encourage high participation levels.

Essential Job Functions

- Attend regularly scheduled meetings (occasionally outside office hours)
- Working with team and management to set measurable project goals
- Gather and analyze information relevant to project design and implementation
- Assist in developing actionable plans
- Assist in executing actionable plans
- Communicate with management and other departments to share findings, project status and green team efforts |
- Promote environmental awareness to all members of the organization

Knowledge, Skills, and Abilities

- Be passionate about creating a better workplace and having a positive impact
- A willingness to get others interested in your green team projects and actions
- Ability to work and communicate with individuals from different disciplines
- Must be willing to be a role model to other employees in the organization



Green Team Meeting Agenda

Attendance:

Agenda:

1. Introduction

- a. Re-cap of last meeting's minutes
- b. Updates from last meeting
- c. Review of existing projects and individual tasks

2. In-office Projects

- a. Updated discussion of the status of various in-house projects
- b. Discussion of fun marketing materials to inform rest of the office
- c. Announcements of any accomplishments or changes in the projects
- d. Discussion of next steps and immediate goals

3. Macro-company projects

- a. Check-in with non-green team member collaborations. Maybe include guest speaker from, for example, the custodial manager on waste, or a message from the CEO.
- b. Update on projects
- c. Identifying next steps and future goals
- d. Discussion of green initiatives from other, comparable firms

4. Community projects

- a. Event planning of community outreach events
- b. Forming partnerships with local business
- c. Parks and local forestry rejuvenation
- d. Planning educational programs with local schools

5. Future Goals

- a. What projects members are interested in starting up next
- b. Ask for volunteers for projects
- c. Map out initial goals and benchmarks

6. Debrief and Recap of meeting's accomplishments

Kick-Off Memo

To: *All Employees*

From: *[name], [title]*

Subject: *Office Paper Recycling at [company name]*

Date:

The average office worker throws away 1-1/2 pounds of recyclable paper every day. That adds up to ___ tons a year from our office alone; meaning that ___ trees and ___ gallons of oil are used every year just to supply our office with paper.

We are starting a program to recycle these valuable resources. By recycling, we will help reduce our dependence on landfills, do our part to improve the Georgia environment, and hold down our disposal costs. (In addition, ___ percent of the money saved from our program will go to _____.)

Participation in this program will mean only a few changes in your daily habits. You will be given a desk-side recycling container for your recyclables. When the container is full, empty its contents into one of the central bins located on your floor. The locations of central containers will be:

- Next to all of the copy machines
- In rooms 123, 223, 323
- In the vending areas

Short orientation sessions will be held on _____ to explain the program. The sessions will start at [fill-in times] ____, ____, and ____. They will last about 15 minutes. Your supervisor has a sign-up sheet. If you have questions, please contact [name], who is coordinating our recycling program, at extension ____. Thank you for your cooperation as we make this significant change in our waste management program. Your participation is important!

Recycling Figures

Use this simple formula to convert volumes of materials recycled to show environmental savings resulting from your recycling program.

___ tons of paper recycled x 17 trees per ton = ___ trees saved

Recycling one ton of paper saves:

- 3.3 cubic yards of landfill space
- 2 barrels of oil
- 7,000 gallons of water
- 4,100 kilowatt-hours of electricity (enough to power an average-size house for six months)

Recycling one aluminum can saves enough electricity to power a 100-watt light bulb for three hours and your TV for three hours. Recycling one pound of cans saves 7.6 kilowatt-hours of electricity.

Centeva Sustainability Committee Timeline

<i>Task</i>	<i>Week 1</i>	<i>Week 2</i>	<i>Week 3</i>	<i>Week 4</i>	<i>Week 5</i>	<i>Week 6</i>	<i>Week 7</i>	<i>Week 8</i>
Identify Project								
Assign Responsibilities								
Form Subcommittees								
Research Project								
Collect Data								
Identify Targets								
Meet with Subcommittee to Discuss Strategy								
Establish Implementation Strategy								
Company-Wide Implementation								
Collect New Data								
Announce Results								



ENERGY STAR® Green Team Checklist

One person cannot do it all! So when it comes to making your workplace greener and more energy efficient, nothing beats a team. The Environmental Protection Agency (EPA) has learned from ENERGY STAR partners that forming a green team with coworkers is a great way to help increase energy efficiency and reduce office waste.

Consider the following checklist of creative ideas from EPA to help your green team get started. Once you've formed your team, start by planting the seeds for success with small changes in individual workspaces. Then move through the list and help success bloom with bigger changes that can affect the whole organization. Together, these actions can help your green team build a better world!

STEP 1: GET ORGANIZED

- Start Off Right**—Meet with management to get approval and buy-in for the idea of forming a green team. Not only does support from management add legitimacy to your team, some of the measures needed to "green" your workplace might require an investment of time, money, or both by your organization.
- Recruit from A-Z**—Encourage coworkers from different levels and parts of your organization—from senior management and interns to facility managers and human resources personnel—to get involved. A team approach improves buy-in from all levels of the organization, which helps to ensure greater support and success.
- Kick It Off**—Organize a kickoff meeting to develop a plan of action—the suggestions below are a great place to start. Another great resource is EPA's [Teaming Up to Save Energy guide](#), which provides step by step instructions for forming an energy team—many of which apply to green teams too—as well as real-world examples from other businesses and organizations committed to saving energy, saving money, and fighting global warming.

STEP 2: PLANT THE SEEDS OF SUCCESS

- Spread the Word**—Order copies of the Bring Your Green to Work with ENERGY STAR® [tip card](#) and share them with your coworkers, display the Bring Your Green to Work with ENERGY STAR [poster](#) in break rooms or other common areas, and share the link to the [ENERGY STAR @ work](#) Web site (energystar.gov/work).
- Give It a Rest**—Use the ENERGY STAR [power management settings](#) on computers and monitors so they go into power save mode when not in use. Also use a power strip as a central "turn off" point when you are using equipment to completely disconnect the power supply.
- Unplug It**—Unplug electronics such as cell phones and laptops once they are charged. Adapters plugged into outlets use energy even if they are not charging.
- Light Up Your Worklife**—Encourage your coworkers to replace the incandescent light bulb in their desk lamp with an [ENERGY STAR qualified bulb](#). It will last up to 10 times longer and use about 75 percent less energy. Turn off the lights when you and your coworkers leave, especially at the end of the day.
- Let It Flow**—Keep air vents clear of paper, files, and office supplies so air can circulate freely. It takes as much as 25 percent more energy to pump air into the workspace if the vents are blocked.

ENERGY STAR® is a U.S. Environmental Protection Agency program helping businesses and individuals fight global warming through superior energy efficiency.



LEARN MORE AT
energystar.gov

ENERGY STAR® Green Team Checklist (cont.)

STEP 3: GROW GREEN TOGETHER

- Gain Energy Know-How**—Organize an employee training session using EPA’s interactive Bring Your Green to Work with ENERGY STAR [online office](#). Hold brown bag lunches and invite in-house and outside experts to speak about energy efficiency.
- Test Your Energy IQ**—Still not sure how to go green at work? Encourage your coworkers to organize teams and take EPA’s online [Energy IQ quiz](#) and see how you do!
- Celebrate Earth Day Every Day**—Organize an event for Earth Day (April 22), Energy Awareness Month (October), or other local events - such as fairs, festivals, or community clean-up days - to spread the word to coworkers about energy efficiency. Find more ideas at [energystar.gov/challengekit](#).
- Make It Count**—Encourage your organization to become a [Change the World, Start with ENERGY STAR pledge driver](#) and compete between departments or offices to see who can collect the most pledges.
- Trade Up**—Host an event where employees can trade an incandescent bulb for an [ENERGY STAR qualified bulb](#).
- Picture Perfect**—Demonstrate to co-workers how they can save energy by creating an office or cubicle that is a model of efficiency. Check out EPA’s [interactive online office](#) for ideas!

STEP 4: HELP IT BLOOM

- Encourage a Corporate Commitment**—Explore whether your organization has a formal energy policy, and if it does not, suggest that your organization take the first step by becoming an [ENERGY STAR partner](#). Win support by sharing examples of simple energy saving opportunities you’ve witnessed in your office or submit a letter signed by coworkers that suggests actions senior management can take to get started.
- Ask the Experts**—Ask members of your building’s facilities management team if they know about EPA’s online energy management tool, [Portfolio Manager](#). Encourage them to measure and track the energy performance of your building.
- Take Stock**—Talk to your co-workers and see if they have questions or concerns with your building’s temperature, air quality and circulation, lighting, or other features. If you find a high level of concern, talk to your facilities management team and see what you can do together to make improvements.
- Put It in Writing**—Consult with senior management and facilities management to explore the possibility of drafting an action plan based on EPA’s [Building Upgrade Manual](#) and [examples from leading organizations](#), available through ENERGY STAR.
- Champion Facility Efforts**—Help facilities management communicate the benefits of changes and improvements as they implement energy efficiency measures, which may include system maintenance, lighting upgrades, automated system controls additions, and other improvements.
- Get Recognized**—Encourage your organization to earn EPA’s [ENERGY STAR](#) for your building and distinguish it as among the most energy efficient in the country. Share the outstanding commitment your organization has made to energy efficiency and apply for recognition by EPA as an [ENERGY STAR Partner of the Year](#).
- Spotlight Your Success**—Help your organization reach out to the public and the media with [sample news releases](#) that you can customize to promote your ENERGY STAR participation.

** Some of these activities may require approval or authorization from your company or building management. Please act within the guidelines established by your organization or facility.*

For more information, visit
www.energystar.gov
or call **1.888.STAR.YES**
(1.888.782.7937)

United States
Environmental
Protection Agency



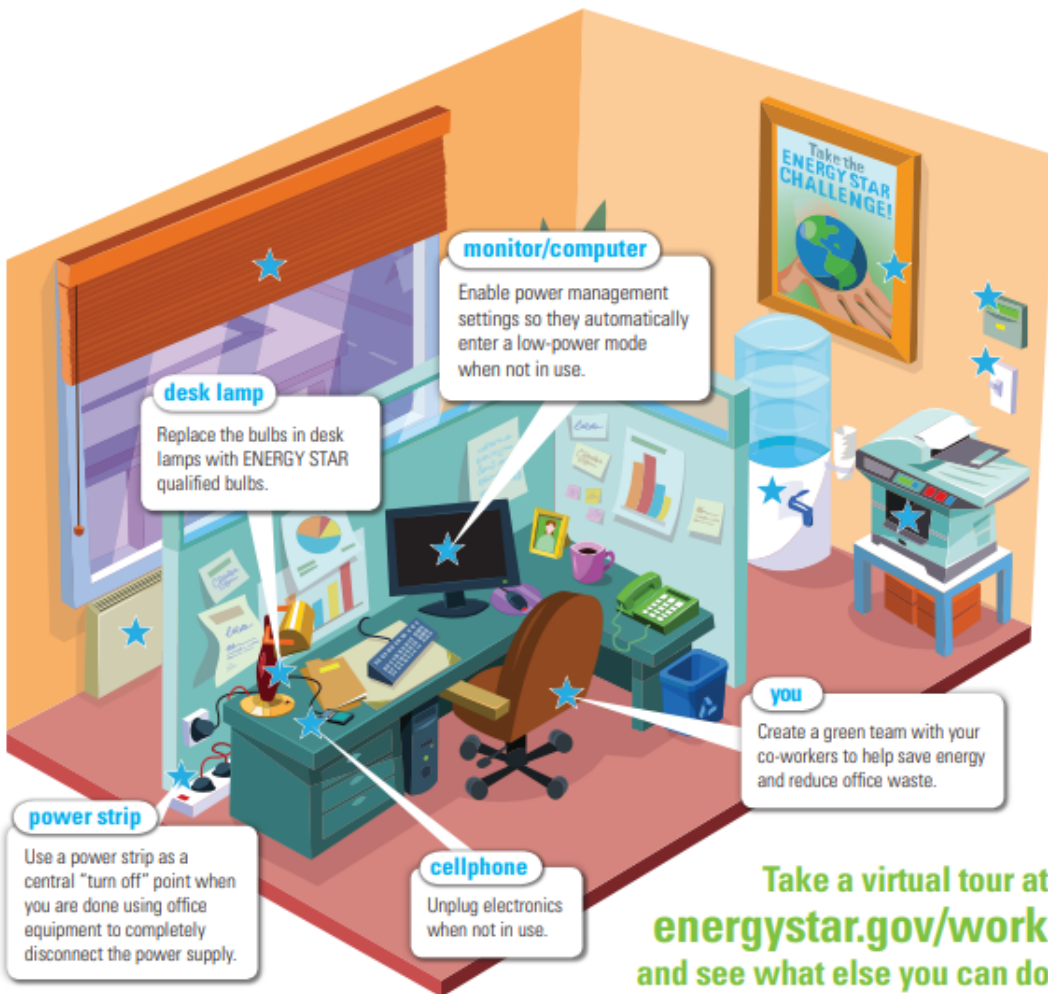

Bring Your GREEN TO WORK

ENERGY STAR



with ENERGY STAR®

The small steps you take at work to save energy can make a big difference in the fight against global warming.



Take a virtual tour at energystar.gov/work and see what else you can do.

ENERGY STAR® is a U.S. Environmental Protection Agency program helping businesses and individuals fight global warming through superior energy efficiency.



Office of Air and Radiation • For more information www.energystar.gov or call 1.888.STAR.FEE3 (1.888.762.7633) • ©2011 EPA • December 2009 • Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 50% Post-consumer Content)



Don't forget to turn me off!

THINK B4U PRINT

Do you absolutely, positively have to have a copy of that document? Some reasons why you should think before you print and recycle when you do.

REDUCE
"Reduce" means using less paper in the first place.

REUSE
Before you recycle or dispose of anything, consider whether it has life left in it. Can you use the back of the paper?

RECYCLING
Recycling is the "R" that has caught on the best. But before recycling, reduce.

DID YOU KNOW?

77%
Of waste generated in offices is recyclable - always the better option than throwing things in the garbage.

1.5 LBS
Is the amount of paper waste each employee in a business office generates each day. Financial businesses produce more than 2 pounds per employee per day.

COMMERCIAL & RESIDENTIAL

Out of all the waste that's being land filled, more than 40% of that waste is paper, which can pollute our environment.

THAT'S THE EQUIVALENT OF

Americans use more than **67 MILLION TONS** of paper every year. That's a lot of trees!

580 LBS PER PERSON

Before you hit the "Print" button on your computer or subscribe to the morning newspaper - ask yourself "how long will I need this for?" If you're just going to throw it away or recycle it) within a matter of minutes, it's best to look at it on the screen. It could save you and your company money, help the environment. If you do consume, be sure to ALWAYS recycle.

Source: www.dep.state.pa.us
Companies of Provider Power:

Electricity**MAINE** **ENH**Power **Provider****MASS**
The Power to HELP The Power to HELP The Power to Help

(Ericson, 2015)

Appendix III: Recycling Signage

Logan, Utah office:



Image from Logan City's "What Can I Recycle" Page (2019b)

"These items are ACCEPTED for recycling - DO NOT BAG YOUR RECYCLING:

- Newspaper
- Mixed paper
- Phone Books
- Magazines/ Catalogs (staples okay)
- Junk mail (no credit cards, please open mail before recycling)
- Cardboard
- Paperboard and cardboard packaging (example: cereal boxes)
- Aluminum cans (soda cans)
- Tin/steel cans (example: canned tomatoes or soup)
- Any small metal (such as metal hangers)
- Plastic Containers #1: Clear plastic with a threaded neck only (no clamshell packages)
- Plastic Containers #2: Milk Jugs" (Logan City, 2019b)

"For all plastic containers: remove the lids and please rinse the containers. PLEASE NO BAGS OR STYROFOAM OF ANY KIND." (Logan City, 2019b)

“These items are NOT ACCEPTED for recycling in your blue container:

- Plastics #3-7, unmarked plastics, plastic bags, plastic lids, plastic clamshells or Styrofoam
- Glass (we have drop site locations for recycling)
- Pizza boxes (if they are greasy - pizza boxes without grease can be torn in half and recycled)
- Frozen food containers that have the food embedded in the container
- Yard Waste
- Foil wrapping paper or ribbons
- Diapers
- Paper Plate, napkins, tissues
- Potato chip bags
- Pet food bags
- Shredded paper
- Waxy milk containers
- Juice boxes or other aseptic packaging
- Photographs
- Any container that once held motor oil
- Hardcover books or spiral bound books
- Aluminum foil or foil pans
- Tissue paper
- Clothing
- Shredded Paper” (Logan City, 2019b)

“Please cut down cardboard boxes so that they fit inside your can and come out easily when emptied and please also remember to rinse any food containers (milk jugs, soup cans, etc.)” (Logan City, 2019b)

Rockville, Maryland office:

Recycling

“Accepted

- Aluminum and Tin
- Bottles and Jars
- Cardboard
- Mixed Paper
- Plastic/Rigid Plastic

Not Accepted

- Aluminum or Vinyl siding
- Automotive parts, fluid bottles and oil

- Metal furniture
- Paint cans
- Glass, dishes, windows, plates, ceramics, mirrors and light bulbs
- Candy wrappers
- Newspapers in plastic bags
- Paper towel, facial tissue and napkins
- Pesticide containers
- Styrofoam
- Water hose, PVC pipe or rubber tubing
- Plastic bags” (City of Rockville, 2020)

Trash

“Not Accepted

- Bamboo
- Compact fluorescent light bulbs
- Electronics
- Metal
- Yard waste
- Animal carcasses” (City of Rockville, 2020)

Appendix IV: Electronic Recycling Resources

In his book, *Greening Your Business: A Hands-On Guide to Creating a Successful and Sustainable Business*, Daniel Sitarz recommends the following (2008):

1. For Dell computers and components: www.dell.com/recycling
2. For IBM computers and components: www.-03.ibm.com/financing/us/recovery/small/buyback.html
3. For Apple computers and components: www.apple.com/environment/recycling
4. For HP computers and components: www.hp.com
5. For computers and electronic components with no brand name above, or if Centeva is making larger donation of multiple sources www.ban.org
6. For cellphones: www.gooddeedfoundation.org/recycle
7. Note: Cathode ray tube (CRT) Monitors contain lead, be careful when recycling

There are also resources available in Rockville, Maryland at Patriot Shredding <https://patriotshredding.com/rockville-md-computer-electronics-recycling/>

and Utah through the Recycling Coalition of Utah: <https://utahrecycles.org/electronic-waste/>