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Questioning Complacency: An Analysis of Sustainability to Foster Innovation

Alexandra M. Bierman
Western Washington University

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Bierman, Alexandra M., "Questioning Complacency: An Analysis of Sustainability to Foster Innovation" (2022). *WWU Honors College Senior Projects*. 545.
https://cedar.wwu.edu/wwu_honors/545

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IMPLEMENTING SUSTAINABILITY

Information to Incorporate Sustainability into PowerTool Safe

Alexandra Bierman

PowerTool Safe | Winter 2022

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Sustainability Plan Framework

Throughout the last few months, I have been working with a company called PowerTool Safe. Collectively, we worked to create an outline of a sustainability plan which would guide the direction and future decisions of the company.

At PowerTool Safe (PTS), we believe that our actions have direct consequences on the environment. We are builders, creators, visionaries, who recognize our role in taking responsibility for our impact, and fostering change not only in our community, but also on a national scale. We recognize that as a company that is primarily web-based, the impact of energy-use to maintain and operate the servers is substantial, in order to model responsible environmental stewardship, our goal is to understand our current impact and adopt a plan that minimizes the emissions directly related to our services.

PTS is committed to increasing energy efficient through partnering with companies actively working to improve our communities and lower our environmental footprint to protect and preserve the resources which we rely on as builders.

Our **Mission** at PowerTool Safe is to provide contractors and builders with the tools they need to protect their equipment in a way that reduces theft in the construction industry while promoting a healthy timber ecosystem which ultimately supplies the industry.

Assessment Outline

In this assessment, our team conducted research about, and analyzed the environmental footprint of the company. PTS is a Software as a Service company (SAAS), that offers asset management to builders and contractors. These services are designed to help contractors protect the tools which allow them to make a living. This company is new, and they are eager to incorporate sustainability from the ground up. I will look at information provided by company employees and subcontractors to estimate the total emissions produced by the company—employees included. Then, I will outline steps to reach goals of emission reductions, and a general timeline. Further, I will discuss potential future partners for carbon offsets to offset the total company emissions.

Sustainability Defined

Sustainability not only improves the quality of our lives as builders and consumers, but it enriches our environment, promoting a system in which we take care of the Earth, and it takes care of its inhabitants. This concept recognizes that there are a finite number of resources available for consumption, and in order to sustain ourselves now and in future generations, we must learn how to use resources rationally to protect what inputs remain. This idea of

sustainability has permeated into the American environmental movement, informing decisions about future development and its impact on the localized community.

Sustainability can be categorized into three pillars which analyze the intersection of environment, economics, and social realms. The social pillar looks at human health, standard of living, education, and community (Fiksel et. al, 2012, p. 13). Conversely, the environmental pillar dives into natural resource use and environmental management and the economic pillar explores economic growth, R&D, and cost/savings (Fiksel et. al, 2012, p. 13). In using this concept of the three pillars, a measure of these systems was created, called the sustainability indicator. The sustainability indicator is "useful for monitoring changes in system characteristics relevant to the continuation of human and environmental well-being" (Fiksel et. al, 2012, p. 12). This system is an essential part of progress toward a more sustainable world because indicators can assist managers and policy makers to anticipate conditions and historical trends, utilize environmental benchmarks, as well as establish strategies and goals for environmental footprint reduction.

If there is not a management plan for how resources will be used, there will not be ample availability of those resources for future generations. The EPA outlines how the natural environment provides everything we need for our survival and overall well-being. Therefore, if sustainability is to be pursued, we must "create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations" (EPA 2021).

Goals at PTS

PowerTool Safe is a company built from experience in the construction industry. Paul Bierman is the founder, and CEO of the company, and was an independent contractor for over 20 years. His experience in the industry allowed him to understand the inseparable connection between the natural environment and societal development. The construction industry is entirely reliant on goods sourced from the Earth, namely wood, which points to the importance of sustaining resources for future generation to utilize. PTS wanted to create a sustainability plan, not only to understand the impact of their company's services on the environment, but also to foster awareness in the industry about the importance of conserving resources. Moreover, a sustainability plan will help guide future company decisions.

Long Term Sustainability Goals for PTS

These goals are some of the main we are interested in at PTS to use our platform to drive a larger global effort towards sustainability in the construction industry.

1. Minimize the company's GHG emissions
2. Offset emissions through community partnerships
3. Require company trainings to encourage sustainability among employees
4. Making simple acts of sustainability accessible

Making it Happen

Creating a sustainability plan is no easy task, requiring planning and effort. One way to guide planning efforts is to create an outline, or a timeframe for getting certain tasks accomplished. Michelle Voll has created this outline of a sustainability plan that would be used for PTS, guiding the process to create the final plan to implement into the company. This process can take up to a year and is continually evolving as a business grows. The needs and desires of PTS will continue to change, which is why having a sustainability team to guide the direction of the company is critical in achieving their sustainability goals.

Sample Action Plan

Created by Michelle Voll, CSCS

Plan Component/ Method	Action Steps	Timeline
Develop Vision, Mission, Case for Support	<ul style="list-style-type: none"> - Create and staff a team to guide the planning process - Discuss with staff and community members why the program is needed - Identify and talk with other community members 	Months 1-3
Develop Goals and Objectives	<ul style="list-style-type: none"> - Develop a logic model to clarify sustainability goals, create specific program objectives, and identify measures to track progress and outcomes 	Months 1-3
Research and Identify Potential Stakeholders	<ul style="list-style-type: none"> - Identify priorities such as community engagement, strategic communication, leadership development, governance, and management - Talk to other agencies who might share a similar interest to make connections - Talk to local businesses about how your program could benefit their interests 	Months 1-3
Initiate relationship with potential stakeholders	<ul style="list-style-type: none"> - Schedule community/ partner meetings - Select team of helpful community members, agency representatives, and businesspeople to act as advisory committee, formulate meeting agenda - Prepare invitations and ask folks who recommended individuals for your committee to invite them personally 	Month 4

	<ul style="list-style-type: none"> - Prepare written materials for participants outlining the program’s purpose and vision. Language should match community interests garnered from earlier research and interviews with community members 	
Analyze Program Cost	<ul style="list-style-type: none"> - Clarify financing for services and outcomes - Map current spending and analyze funding gaps - With staff and advisory committee, develop financing strategies, evaluate options, and develop recommendations 	Month 4-5
Continue to cultivate stakeholders and create buy in	<ul style="list-style-type: none"> - Hold meetings—include shared vision exercise to get input and expand vision to more stakeholders - Invite press to cover a meeting, highlight participants and outcomes - Always follow up and send thank you notes to participants 	Month 5
Make the Ask	<ul style="list-style-type: none"> - Determine best strategic partnerships and key community leaders to involve - Determine appropriate levels of collaborative commitment to ask for - Determine who should ask for partnership involvement. Jointly develop strong “case” for potential partner’s involvement. Be specific about level of commitment requested 	Month 5-7
Follow-Up	<ul style="list-style-type: none"> - Formalize relationship with volunteer position descriptions, and formalize advisory committee roles 	Months 5-7
Be a Good Steward	<ul style="list-style-type: none"> - Offer opportunities for continued involvement in shaping the program through regular meetings and dialogue - Share the credit and celebrate successes - Make sure the program is mutually beneficial to all partners 	Months 8-ongoing

Create and execute fundraising plan	<ul style="list-style-type: none"> - Identify products or services of your program that are valued in the community and could produce income to offset project expenses - Create a team and marketing plan to develop and market business - Identify budget items that could be provided in-kind by partners, other stakeholders. - Select methods and teams for fundraising method (grant writing, direct mail, special event, major donor clubs, in-kind resource gathering, phone-a-thon, personal solicitation) - Select team members for meeting with prospects individually - Prepare a fundraising plan with objectives and timelines - Launch and execute fundraising efforts 	Months 8-ongoing (carry forward into Year 2)
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This sample action plan was developed using the following sources:

Sustainability Toolkit developed by the Corporation for National and Community Service. Available at <http://www.SustainAbilityOnline.com>

Sustainability Planning Workbook published by the Finance Project. Available at www.financeproject.org/engage/workbook.asp

Data

At PTS, we are eager to move toward a more sustainable, environmentally focused future. For us, the first step in doing so is assessing the current impact of both our company and our subcontractors. To start, we gathered data about our subcontractors, regarding their energy use. To find this, we looked at the size of the home they lived in, and compared that to the size of their office, allowing us to find the proportion of electricity their home office is using. To do this, we assessed utility bills to find the average electricity usage (in kWh) per month, as well as natural gas (in therms), to find a yearly CO₂ metric ton equivalent of electricity use for an at-home office space. Further, we also looked at how much the subcontractors were having to drive for their job to get to a CO₂ metric ton equivalent of vehicle emissions per year. Using all this data, we created a spreadsheet (can be found [here](#)), which tells us how each employee, in considering an at-home office space and use of electronics, as well as transportation, emits roughly 2 tons of CO₂ per year. In the next section, we will talk about ways in which we would like to pursue lowering and offsetting our company emissions, including those of our employees and subcontractors.

Furthermore, these emissions outlined were only conducted for employees and subcontractors of the company, and not for the emissions of the servers that power the software to run PowerTool Safe. In order to conduct research on emissions of the servers, PTS is going to put together a sustainability team which will calculate specifically the emissions of both employees/subcontractors, as well as the energy required to run the online interface and software system.

Emissions Offsets

Through the EPA's Greenhouse Gas Equivalencies Calculator, we can assess what it will take to offset the impact of employees and subcontractors for Powertool Safe. Here is a table which guides the amount of emissions reduction required to offset the impact of PTS workforce.

Table 1: Carbon Dioxide Emissions per Employee/Subcontractor

Number of individuals working for PTS	1	2	3	4	5	6	7	8	9	10
Tons of CO ₂ Produced	2	4	6	8	10	12	14	16	18	20

Henceforth, if there 8 individuals working for PowerTool Safe, then PTS would need to either reduce or offset emissions by 16 tons of CO₂ per year. Furthermore, these emissions will only reduce the impact caused from each individual in the company, and not the impact from running the servers which power the online platform—this will be a separate calculation. Through the EPAs Greenhouse Gas Equivalency Calculator, we can see that in order to offset 2 tons of carbon dioxide emissions per year, that would be equivalent to either reducing GHG emissions or through carbon sequestration—meaning efforts that actively pull carbon out of the atmosphere. This process is not linear, and there is no right answer, but there are many ways companies can actively choose to make a difference. However, to offset 2 tons of carbon dioxide emissions, this could be equivalent to 0.68 tons of waste recycled instead of landfilled, or 75.8 incandescent lamps switches to LEDs. Further, it could also equate to 33.1 tree seedlings grown for 10 years.

Table 2: Numbers of Tree Seedlings Necessary to Offset Carbon Dioxide Emissions of Employees/Subcontractors

Number of individuals working for PTS	1	2	3	4	5	6	7	8	9	10
Number of trees planted to offset employee/subcontractor emissions	33.1	66.2	99.3	132.4	165.5	198.6	231.7	264.8	297.9	331

Above is a table outlining how many seedlings would need to be planted per individual doing work for PTS in order to offset their environmental impact. Tree planting is not necessarily the only path to explore in terms of offsetting emissions, however, PTS is interested in planting

Greenhouse gas emissions avoided by



Carbon sequestered by



Figure 1: Equivalencies of Carbon Dioxide Emissions--source: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

trees because it is a company that mainly supports people in the construction industry. Moreover, the construction industry heavily relies on timber as resource, so, planting trees is one way to promote healthy ecosystems. Additionally, PTS is passionate about continually evolving and using their voice, as well as their influence, to instigate and promote environmental sustainability in the construction sector on a much larger scale.

Potential Partnerships

PTS is interested in working with a variety of programs to start incorporating sustainability principles, as well as giving back to the industry upon which construction relies on. One program PTS would like to work with is One Tree Planted, a global nonprofit that plants trees to “restore forests, create habitat for biodiversity, and make a positive social impact around the world” (One Tree Planted). There are many reasons to plant trees, but here are just

a few. Trees filter and clean the air we breathe, the water we rely on to drink, and they also make up habitat for over 80% of the global biodiversity (One Tree Planted). Moreover, trees also produce a key ingredient for nearly a quarter of all medicine—for example, Aspirin is made from the bark of a tree (One Tree Planted).

Now, some people may argue that planting trees is a waste of time, money, and resources. For example, one may argue that trees take time to grow, and will not be as efficient at absorbing oxygen until it matures. Moreover, there are organizations that do not plant the right trees in the right places. So, yes, there are some drawbacks to planting trees, but planting trees is still worthwhile if done right. There are many organizations dedicated to doing the research, and making a difference, PTS believes that giving back to organizations that the construction industry is relying on, is a worthwhile effort. A partnership with One Tree Planted would look like a large donation from PTS on behalf of the company (including its employees and subcontractors) to offset emissions produced directly by the company.

While partnering with organizations that are active in reforestation efforts is a priority, PTS has outlined their desire to make a direct impact in their community as well. The Energy Resource Center located in Colorado Springs is a nonprofit that is working, "to improve home energy efficiency, conserve energy, promote health, increase comfort, and expand Coloradoans' quality of life" (ERC, 2020). ERC is working towards providing every Colorado household with the opportunity to maximize the energy efficiency in their home, while decreasing the imminent threat of hazards in the near future. This vision of a sustainable future is what draws PTS to community-based programs such as the ERC. PTS is hoping to work with companies making a direct impact not only in their community, but all around the world, in order to mitigate the overwhelming effects of climate change that are yet to come.

There are many directions that PTS can take to offset carbon emissions, and these two companies are just some options for paths forward. Additionally, PTS is excited to explore options that actively reduce emissions related to server activities that are necessary to maintain and run the online platform. Further, PTS is looking into ways to encourage employees and subcontractors be more sustainable in their daily lives. This could look like an internal, rewards-based program to incentivize employees to recycle, compost, or even purchase green-energy to power their homes.

Conclusion

Systems thinking is a way to assess individual factors and interactions which could contribute to a variety of possible outcomes. Moreover, this framework can be a powerful tool to assist in navigating the complex balance of the natural and socio-political ecosystems in

which businesses operate (Poppin 2021). This approach to sustainability allows society to understand the widespread impacts of business decisions, thus giving a chance to reveal unintended consequences. It fosters innovation, allowing for incremental or broad change, which enables us to "untangle and work within the complexity of life on Earth" (Poppin 2021, para. 4). A systems approach encourages responsibility for the consequences of our creations. We recognize that as a business, we inherently have an impact on the earth, and the lives of individuals. In recognizing this, we are attempting to integrate sustainability into the fibers of the fabric which makes up the company. Working toward sustainability is about the journey, and not the destination. It is a learning process. We are excited to work with our employees and subcontractors to foster innovative ideas regarding our future, as well as establish a framework for sustainability which we can truly make a difference with.

The construction industry is consuming and intensive, but we hope to be a small part of the trade which encourages sustainable decisions and gives back to community. Through emissions offsetting, as well as working with local programs like the ERC in Colorado, we hope to not only offset our emissions, but also develop relationships to make a difference in people's lives.

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