Executive Summary
Sustainability and Circular Economy Development: An Analysis of Oregon CBD
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Internship Conducted at: Oregon CBD

To fulfill the requirement for the Professional Science Master’s degree in Environmental Science I served as the Compliance and Sustainability Intern at Oregon CBD. Oregon CBD is a Research and Development company that breeds hemp for plants rich in cannabinoids. Their primary products are scientific knowledge and hemp seed for cannabinoid production. The focus of my internship was to develop a sustainability analysis applying circular economic concepts at Oregon CBD. Specifically, how to adjust processes to reduce waste and pollution while keeping materials and products in use. This was primarily accomplished through two separate projects. The first project was a solar farm analysis and the second was a waste reduction analysis through the employee garden.

The solar farm analysis was conducted because current and projected electricity consumption for the company are very high. This analysis used energy consumption, solar panel wattage, average hours of sunlight and either number of solar panels or relevant acreage needed for solar panels, to calculate total cost to set up a solar farm. The results were based on three separate scenarios. The first was to offset current energy consumption, the second would be projected consumption after facility expansion and the last, on a 12-acre limit dictated by the state of Oregon for solar farms land zoned Exclusive Farm Use. To offset current energy use would require 11.22 acres and $5.7 million after 2020 tax incentives. To offset projected energy use would require 32.47 acres and $17.2 million after 2020 tax incentives. Using 12 acres as the limit would cost $6 million which would offset all of the current energy consumption and 37% of projected needs. At present because Pacific Power has a 2-megawatt (2000 kilowatt) tariff cap on what they will purchase from their customers in the area, developing up a solar farm in the proposed location near company headquarters in Independence, Oregon unfeasible. Future analysis will investigate a location better suited for a solar farm to offset energy consumption with renewable energy.
The second analysis is based on observations during my internship on how to reduce waste through the employee garden. Throughout my internship I identified four major forms of preventable waste. The first was potting soil waste, the second was cardboard packaging waste, the third was organic waste and the fourth was garden produce waste. Through proper management of the employee garden the waste identified can be either reused, eliminated or greatly reduced. In doing so Oregon CBD is able to shift toward practices that allow it to transition toward a circular economy. The process to convert waste into a renewable resource through the garden has been initiated and a team of employees has been identified to validate my analysis and recommendations.

These two projects when properly implemented, have the potential to positively affect business’s finances through tax deductions and reduced waste, human resources through employee satisfaction and retention, and marketing through positive reputation. If the solar farm is established, it can offset all or part of the company’s energy consumption and pay for itself in approximately 7 years. After 7 years that would be a savings of between approximately $819,000 to $2.3 million per year depending on the system installed. The employee garden is more difficult to quantify, but in 2019 it yielded over $1700 in tax deductions for the company and provided food security for employees and community.

This internship has been valuable for me in many ways. Not only have I had the opportunity to develop and apply my skills from my previous career as an aviation safety officer through a safety program I created and implemented, but I was able to experience and overcome some of the challenges of developing sustainability in a growing business in an emerging field. I became an employee at the completion of my internship fulfilling the role of the Safety and Sustainability Manager. I also have a role conducting policy analysis at the local, state, national and international levels.