Situation Target Proposal (STP) - Carbon Consumption Analysis

Prepared by Melton Team:

William Holbert, Dana Kenney, Tatumn Starr, Jacob Voyles, and Sydney Yeargers

1. Situation:

The Melton Team is working on a project for Microsoft to examine the distinct factors that contribute to carbon consumption by the company, with the goal of producing an annual forecast of the company’s carbon consumption through 2032. Understanding the trends and patterns of energy usage will help Microsoft to understand what factors contribute the most to carbon consumption and how best to minimize it in accordance with their pledge of being carbon negative by 2030.

* 1. Business Requirements:

When completed, the carbon consumption analysis will address the following business questions.

* + 1. What characteristics are prevalent to carbon consumption?

This part of the analysis will focus on understanding the primary sources of carbon consumption within the company. Currently we have several sources in mind, like consumption from data centers, employee offices, as well as employee travel and product manufacturing. The goal is to understand where most of the carbon consumption is happening within the company, and to be able to make an informed suggestion regarding ways to decrease said consumption.

* + 1. Predictions and projections of carbon consumption.

We plan to gather data on carbon consumption from previous years and use it to produce an annual forecast of carbon consumption through 2032. We will do this using analysis of levers/factors that are found to be significant predictors for consumption. Additionally, we will use this forecast to provide recommendations with the goal of aiding Microsoft in fulfilling its pledge to be carbon negative by 2030.

* 1. Completed Analyses as of present

To date there have been no studies made publicly available regarding the factors to consider when forecasting something like total carbon consumption within a company. We will be required to aggregate our own dataset for the purpose of this analysis.

1. Target:
   1. What characteristics are prevalent to carbon consumption?

Brings out the dominant features of carbon consumption. We have a better understanding of the factors that influence carbon consumption and how to best reduce them.

* 1. Predictions and projections of carbon consumption.

We have a forecast model available for projecting carbon consumption annually through 2032.

1. Proposal:
   1. Action Steps:

|  |  |  |
| --- | --- | --- |
| **What** | **By When** | **Who** |
| Preliminary Research on Topic | Week 5 (Ongoing) | Team Melton |
| Data Gathering and Storage | Week 7 | Team Melton |
| Exploratory Data Analysis | Week 8 | Team Melton |
| Data Visualization | Week 8 | Team Melton |
| Modeling | Week 9.5 | Team Melton |
| Product Planning | Week 10 | Team Melton |
| Product Development | Week 13 | Team Melton |
| Results | Week 14 | Team Melton |

1. Possible Major Barriers to Success:

The main barrier to success is the lack of previous research done on this topic, and the lack of access to datasets for this purpose. Presently no datasets have been aggregated for the purpose of forecasting carbon consumptions, and the team has been given limited/no access to internal data from the company.

Help Required:

The team will require the mentor’s domain knowledge on sustainability, as well as access to the CDP data that is currently behind a paywall.