Establishing Sustainability Practice at Penn State Using a Carbon Accounting Service

Overview
Transitioning to a future sustainable energy infrastructure and requires balancing innovation, policy, and investments on the triple bottom line approach incorporating people, profits, and planet. In order to achieve important environmental goals set by Penn State in CO2 reductions a measuring system must be implemented. The system should be scalable, real-time, and present important and relevant data while also being able to inform all of Penn State’s stake-holders.

Objectives
Our objectives were to perform an analysis of the CO2 footprint per building by energy end use percent, and to find any equipment or system changes that would enable and improve the relevance of such metering.

Approach
• First we were going to use Tabulated values to calculate CO2 from electricity/steam consumption
• These would be constructed on a monthly basis and presented in graphical form
• Our sponsor informed us about a carbon accounting service known as Measurabl
• Measurabl provided us with what we were going to do and more
• We then compared other similar services within our concept selection
• We decided on using Measurabl as it met our sponsors needs and provided pertinent visuals
• We then inputted the data obtained from OPP into Measurabl using a template
• We were able to compare this information with our own calculations, validating our results
• We then generated utility consumption, costs, and CO2 emissions for four buildings at Penn State
• This is easily accessible by allowing stakeholders view the information and visuals

Outcomes
• Our Sponsor will now be able to continue his efforts for creating a sustainable infrastructure at Penn State by developing this service further
• The use of Measurabl allows easy data input with minimal work
• A variety of interesting visuals are able to be viewed through Measurabl
• Many other features are able to be used through Measurabl including normalizations and water usage
• The Figure to the right shows an overview page of the four buildings analysed