SolarSize - Vlog 1 Script

Team Members & Envisioned Responsibilities

Tristan Brown-Hannibal
- Data representation
- Meeting coordinator
- Server/web management
- Back-End Design

Karlee Fidek
- Documentation
- GitHub/Wiki Management
- Front-End Design
- Database Design

Kaden Goski
- Data Processing/Management
- Vlog Editor
- Back-End Design

Project Idea

Working with Greenwave Innovations, there is a desire to create a tool that utilizes actual building energy consumption metrics and solar intensity data to calculate accurate ROIs on solar power generation. This tool will allow customers to see how different photovoltaic (PV) systems match up to their requirements, so they can make informed decisions.

This tool could also utilize this data, once installed, to ensure that the solar power generation is meeting standards, and if not, alert the customer of an issue such as snow blockages, cracks, etc. There could also be an extension into other Greenwave business domains, such as power storage sizing for cloudy days and the night time.

Project Background & Business Opportunity

Greenwave clients want to ensure their investments into solar power generation have a return on investment that they desire. Solar generation can offset the costs of power used by an organization. When the power generated by solar matches power used by the organization, it is counted as a full credit, but any over generation is counted as a half credit on their monthly bill.

The problem is that there is not a good way to quickly size the needs of a customer, with respect to their individual circumstances. Two organizations may use the same amount of power, but the PV solution may be completely different. This is because of aspects like the solar intensity of a location, or the physical makeup of an organization's space, where they would install these solar generators. Being able to profile, and give accurate information about a solar solution, would help customers make better choices, and maximize their ROI.

Reason

We aim to solve the problem of solar power sizing and real-time data analysis. Currently at Greenwave Innovations, solar power sizing is crude and is generally done to match peak-power consumption of a building. Real-time data is also limited and clients cannot access it easily.

This will allow Greenwave to accurately advise clients on return on investment of solar installations. As well as notify them when they aren't producing as much power as expected and give the clients the ability to see the data in real-time. This will allow clients to remedy issues with their installations when they occur, not when they realize they under-produced at the end of the month.

Impact

"When we are done, the task of sizing solar power installations, and accessing and analyzing associated real-time data will be more intuitive so we think we need to provide a quick and easy way for users to size and access real-time information about solar power."

We aim to provide a solution to Greenwave Innovations that meets these requirements to help them and their clients.

Who

Our primary audience will be Greenwave Innovations. Greenwave Innovations will be the primary users of our solution as it will eventually be integrated into their system. As they will be using the application to make recommendations to customers regarding renewable generation solutions and ROIs, Greenwave Innovations opinion matters the most when considering the design of the application. In order to ensure we are meeting their needs and expectations, we will be meeting with them on a bi-weekly basis. This will allow us to verify that the work we are completing is relevant and will provide value to them.

Our secondary audience will be Greenwave Innovations' clients. Greenwave Innovations works with clients across Saskatchewan working to provide them with recommendations for implementing renewable generation systems and calculating accurate ROIs. Our solution will

aim to help Greenwave Innovations' clients receive the most beneficial and accurate advice, leaving them with accurately sized renewable generation systems giving them the best ROIs possible.

What

The application will rely on processing data regarding energy consumption and solar intensity. Therefore, we will be limited by the amount of data available to us. We will also be constrained by our knowledge of the business area and field. We foresee the project requiring the use of unfamiliar technologies as the application will make use of some type of predictive modelling, artificial intelligence (AI), or machine learning. In addition, the application is expected to be integratable within Greenwave Innovations' system which will require us to design the application to fit their system architecture, possibly limiting some of our design options. Our time frame for this project is 8 months, with weekly meetings to do work, as well as regular meetings with Dr. Maciag, Dr. Yow, and Greenwave Innovations.