Project Bazaar #2

Jan. 25, 2022 - Mar. 1, 2022

Team SolarSize
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+

GREENWAVE
INNOVATIONS

Team Member Introductions

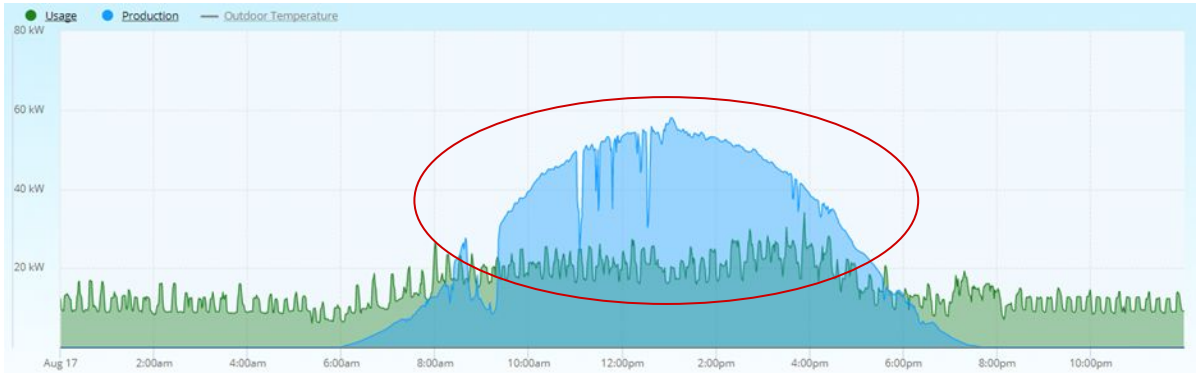
Tristan

Karlee

Kaden

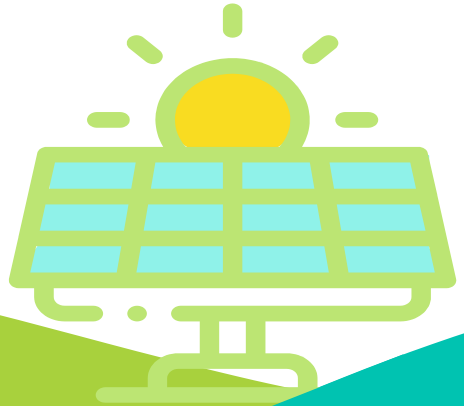
About This Project

- In partnership with a local company - Greenwave Innovations
- A tool that utilizes consumption metrics and solar intensity data to calculate accurate ROIs on solar power installations
- Help to determine over or under generation windows and size solar installations accordingly



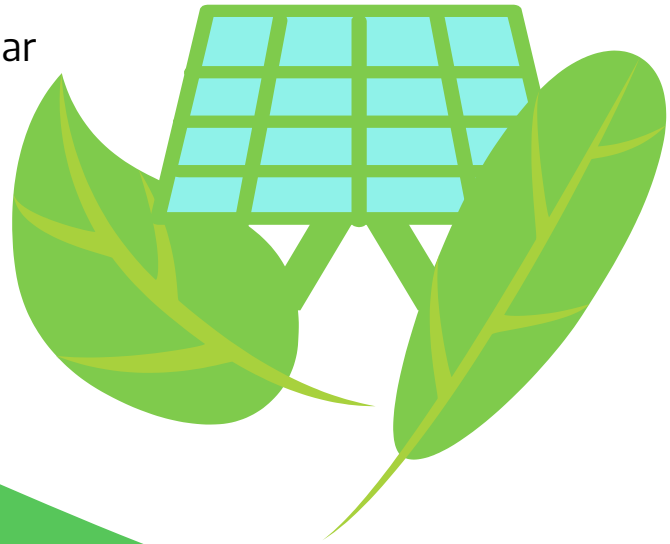
Problem We Are Attempting To Solve

- Determining accurate ROI
- Accurate sizing on solar power installations



Our Why?

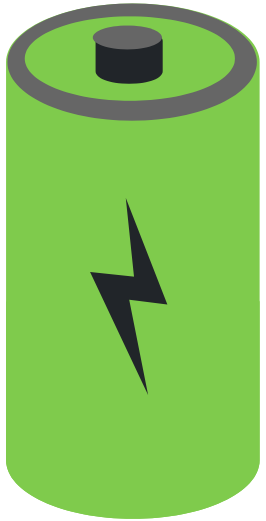
- Fossil fuels are the primary source of energy in Canada
- Solar energy is renewable and sustainable
    - Alternative for fossil fuels
- Persuade more people and businesses to install solar generation solutions



Project Status

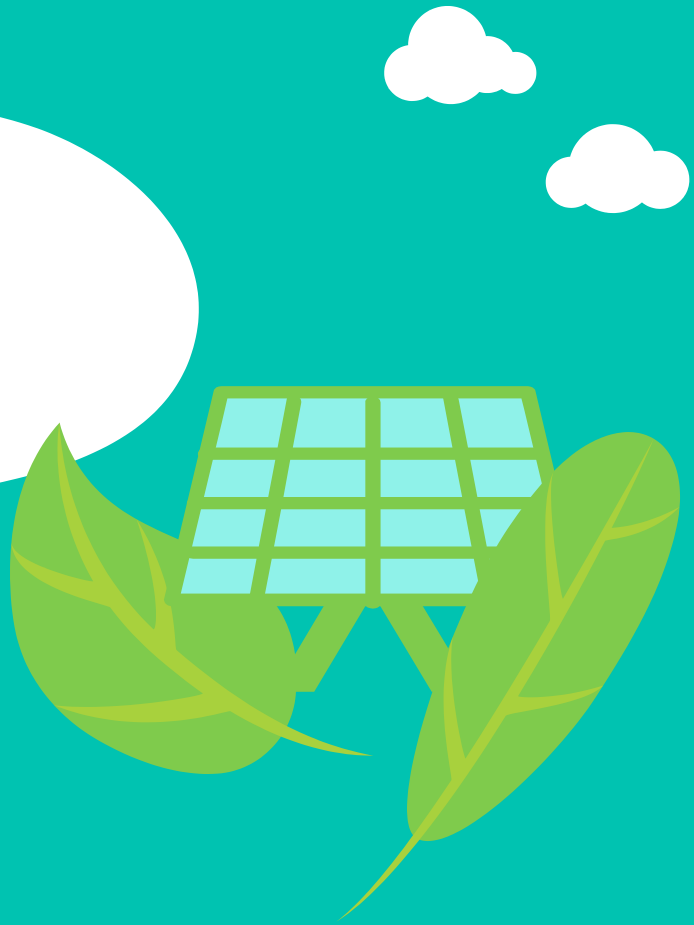
Green

- Implemented ROI and annual cash flow calculations
- Implemented optimal solar installation analysis



Project Issues/Changes

- Focus more on optimal solution calculations rather than custom solution analysis



Team Member Contributions

Tristan

- Add inputs for ROI calculation and input icons
- Update python to accept list of different solar panel types
- Determine solar production of an array of different solar installations
- Summary page updates - cash flow diagram, optimal installation details

Kaden

- Solar model testing
- Confirm linear scaling of panel generation
- Implement radial degree slider input

Team Member Contributions

Karlee

- Researched and implemented ROI and annual cash flow calculations
- Project day abstract
- Trello board
- Documentation

Group

- Completed MVP #4
- Met with Greenwave Innovations
- Determined how we would approach handling optimal installation calculations

ROI and Annual Cash Flow Analysis Calculations

Balance Remaining (end of 1st year) = Capital Cost + Loan Interest - Amount Saved
Balance Remaining (2nd year and on) = Balance Remaining + Loan Interest - Amount Saved

Capital Cost = (System KW * Cost/KW Installed) + Interconnection Study Fee +
Bidirectional Meter - Grants/Rebates

Amount Saved = (Power Produced * Price of Power) - Maintenance Costs

ROI % = (Total Saved / Total Cost) * 100

Years Until Paid Off = 1 / (ROI % / 100)

Demo

Inputs

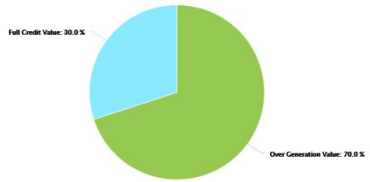
Summary

Return Statistics

Total Return on Investment:

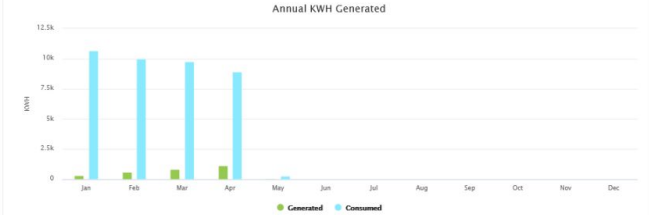
$-287.00

Full Credit Generation Value Vs. Over Generation Value

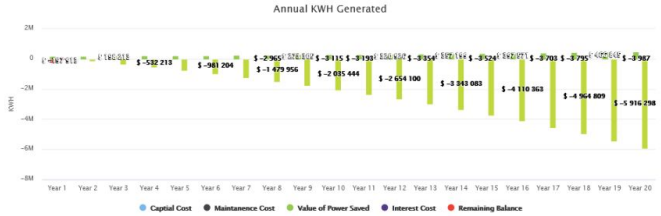


Generation Statistics

Annual KWH Generated:
2976.2195298694023 KWH



Cash Flow Estimation



Best Panel

The optimal panel setup is:

219 Longi – LR4-60HPB-360M – Mono – Blacks
Angled at 30° degrees

Consumption Graph

Next Up

Tristan

- Allow for extrapolation of ROI based on current data
- Help page - optimal solar installation analysis
- Caching repeated location
- UI improvements

Kaden

- Save configurations
- Help page - solar model information

Next Up

Karlee

- Help page - ROI and annual cash flow calculations
- Look into poster design
- User testing
- Documentation
- Meeting minutes

Group

- Meet with Greenwave Innovations
- Meet with Dr. Yow
- Work on MVP #5
- Complete Vlog #5
- Complete project day requirements

Team Reflection

- **Does the team feel "on track"?**
  - Green
  - Yes, we feel like we are “on track”

- **What progress does the team particularly feel good (great) about?**
  - ROI, annual cash flow, and optimal solar installation analysis

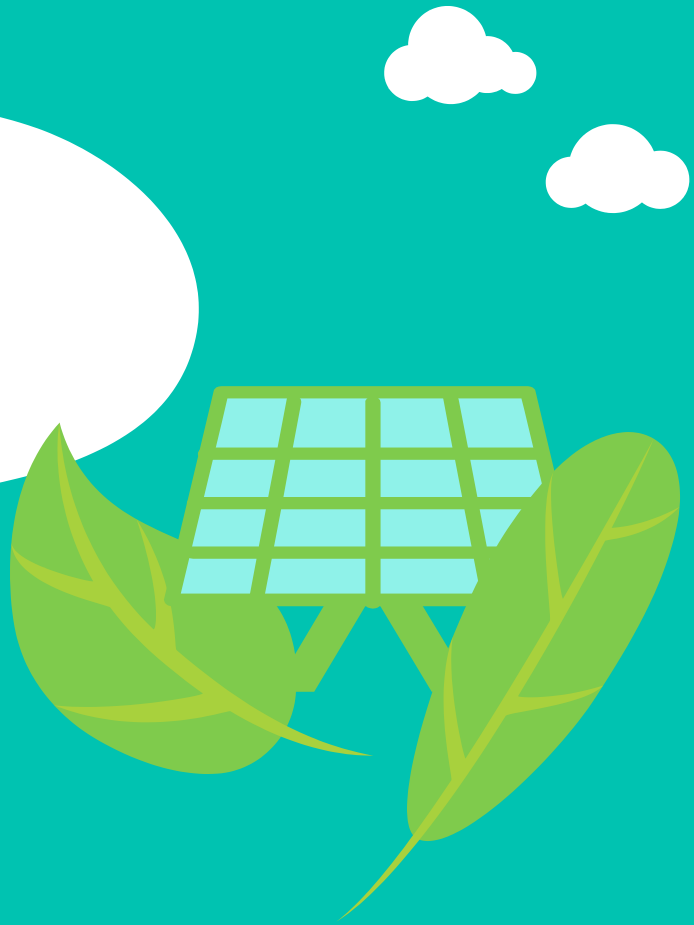
Team Reflection

- **What barriers (if any) does the team feel are a current impediment to success?**
  - No barriers at this time

- **What help (if any) does the team require to move positively forward?**
  - No help required at this time

- **What questions or concerns does the team have (if any)?**
  - No questions or concerns at this time

Questions and Comments



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