**Digital Consulting Project: MIS 6349.002**

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**Deliverable-4**

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**MIS 6349– Digital Consulting Project**

**Deliverable 4 – Solution Design**

# Business problem:

To develop a Solar Hybrid Lithium-Battery Grid-Tie Integrated solution to mitigate the loss of power in roadside toll revenue collection systems, with a 15-year lifespan, centralized cloud-based control and monitoring, and a Total Cost of Ownership (TCO) better than the current solution.

# Project Purpose:

To provide an energy solution that is better than the current solution in efficiency, performance and productivity in terms of

* Providing long lasting energy back up
* Non-frequent equipment maintenance & restructuring
* Functionality to completely adapt to the centralized cloud-based control and monitoring with the costs similar to the existing solutions.
* Low latency
* Competent to perform for 14 hours straight without any human intervention during the situation of loss of energy supply.

# Process Flow Diagram

Diagram

Description automatically generated

# Description of Tools & Platforms Used

|  |  |
| --- | --- |
| Tool/Platform | How you plan to use it |
| Excel Workbook | Basic data manipulation & analysis for sorting, filtering & calculating statistics |
| Jupiter - Python | Used for data cleaning, modelling & transformation |
| SQL | Using for managing & querying large datasets to extract & analyze data |
| Tableau | Using for data visualization & reports |
| ASANA | Using for project management, task tracking & collaboration for the project |
| Google Drive | Using for sharing, storing data, and collaborating with team members in real-time on data analysis |
| Lucid Chart | Report preparation & visual charts |

# DATA MODEL:

Diagram

Description automatically generated

# Gantt chart:

Timeline

Description automatically generated

Finished

In progress

* Found a potential solar provider and moving forward with decision making.
* The market looks very competitive and offer great deal of service providers.

# Project State

* We are currently in the week - 13 of the project timeline, working towards Implementing the solution & strategic Alignment with the company.
* We need additional work to be done in the areas of more refinement of the data to find out more insights and polish our recommendation
* The remaining work includes the design of the recommended solution, recommendation assessment and analysis, preparation of the sales deck, and briefing to the stakeholders.
* It is unlikely that additional tasks outside of the initial project scope will be completed within the given timeline.

# Workflow of the Development Process

* Researching & evaluating the sustainability of the solar powered energy systems that meets the requirements of the TCS better than the existing solution.
* Performed a current revenue generation system and its power supply requirements.
* Analyzed the real-time revenue losses due to the power outages.
* Performing a huge scale of data analysis and data visualizations to generate effective reports.
* Conducting a total cost analysis comparing both the solar & the existing service provision.
* Performing Active market research in the solar energy providers industry.
* Setting up calls and meetings to evaluate the opportunities and potential deals.
* Generating solution recommendations and its strategic alignment with the company
* Re-evaluating and validating the shortlisted recommendations.
* Preparing the sales deck to present to the stakeholders.