EMSS WEEK 2

The Problem's Fit to a Life-cycle Process

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Problem Statement

There has been a constant rise in the cost of the electricity supplied through the power grid. Also, this non-renewable form of energy has constantly seen a rise in its demand. With improving standard of living and expansion of businesses, the usage can only increase and directly affects our budget.

It is the need of the hour to develop and implement a solution which will not only save our money but is also easy on the environment. Our Energy Management Software System helps achieve this goal with efficient management of the freely available solar energy.

EMSS is a reasonably priced, open source, and locally hosted application that helps manage resources intuitively and supports switching between multiple power supply sources. The excess power is stored for future use and with few simple steps, can also be sold to earn money. This is a pocket friendly solution with a huge impact! This product will effectively leverage the use of alternate power generation methods.

Concept of operation

- The EMSS system is aimed at home owners.
- It will support switching between multiple power sources: tidal, wind, and solar.
- The EMSS system can be accessed through smart phones and web browser.
- Our solution will be hosted on a Linux Machine on-site. Since it is open source, this will reduce the cost of setup, maintenance, scalability, and support.

- The user can schedule the method of power supply through the EMSS system, track the state of appliances, and pay the bill.
- Excess generated power will be used to charge the on-site battery which will be used as a power source in times of power failure and to avoid surplus electricity cost. In case the battery is fully charged, this power can be routed to the power grid and can be sold to the company.
- The user can check usage reports through the dashboards. The reports will include detailed information about the usage by each appliance, total monthly usage, earnings, and tips.
- When the system fails, the user would control the source of power supply manually with the help of a simple wall switch.
- When the user goes through a power cut, the system would change the power supply from the grid to the solar energy battery automatically. So, power cut won't be a severe problem for homeowners.
- The system was also support certain level of error reporting. This will be subject to availability of the internet. We also plan to have certain customer care process in place.
- The updates to the system will 2 parts: The firmware patches and the phone application update.

Software Development Process

We plan on using already existing commercial off the shelf software to reduce the time and cost of development. Also, since this will require the development of firmware

upfront, we will be using a combination of plan-driven and agile processes. For the firmware, we will plan everything in advance and will have an incremental approach for development, while as for the phone/web application we will follow a more agile approach. The reason for using Agile is that, feature-wise, we believe that the requirements might change over time according to the user/market needs and we should be able to accommodate those changes in our project.