
APS1013 Applying Innovation in Engineering – Final Team Projects, Fall 2011**Development of Business and Product Strategy for Solar Street Lights**

Our client develops smart power solutions for distributed small point of use applications such as off grid streetlights, security and environmental monitoring, all markets that are quickly evolving such that large off grid solutions have become a viable alternative to distributed power. Our client's products measure, monitor and wirelessly communicate the electrical, performance and environmental parameters of a hybrid wind-solar street light.

The purpose of this report is to review the client's current business and technical development and provide recommendations and insight for future improvements. Through a market research, there are several start-up and established competitors in this field. Our client has distinguished itself by offering both wind and solar hybrid systems in their product offering. In addition, they offer wireless communication and data analysis capabilities which currently unique in this market. The client needs to develop its products to capitalize this opportunity while there are still few competitors offering wireless communication and data analysis. The current partnerships they have allow them to refine their business model and technical solutions while learning and penetrating the market. Once this is done, they will be in a good position to venture into other markets, and explore other application that value similar capabilities.

Upon completion of evaluation of business competency assessment it is found that the client offers relatively satisfactory results. Areas that require particular attention include Manufacturing Operations and Quality Control. We recommend that no further production promises should be made before manufacturing partnership is established. Through our initial investigation, the client has expressed several concerns regarding the technical design of the product. Waterproofing, wiring routing, housing and space management were the main issues associated with the current product. From our analysis, we recommend the following improvements:

Waterproofing: - Add Lexan sheet as a cover to provide water tight seals on display face.

Wiring Routing: - Replace individual lead wires with multi-core cables, Replace wire-nut connections with Molex MX150 multi-pin connectors, Install junction box at the top of the pole, Replace silicon sealant with liquid tight grommets, Relocate output cable to avoid pinch point

Housing: - A custom redesign of the enclosure

Space Management: - Relocate electronics to top of pole with pole top enclosure

It is believed that with these recommendations, the client will be able to resolve their current most critical issues and position themselves for long-term sustainability and business growth.