

# ALGONQUIN COLLEGE.docx

*by* Saeed Buraym

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ALGONQUIN COLLEGE

Project Management

*Project Cost Management and Finance*

*19W\_ACC4100\_300*

*Assignment 1*

*Professor:*

*Paul Boudreau*

*Student:*

*Saeed Buraym*

*040713319*

**PROJECT NAME**

*Free Energy Farm*

**FOCUS AREA**

*Creating Energy Farm Sunlight*

**PROJECT LOCATION**

*Ottawa Canada*

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## Introduction

This is a project that aims at producing energy from the sun. The name is Free Energy Farm Project. It is intended at using PV Panels to create energy from the sunlight and then sell it to the government and any consumer who might be interested in using it such as companies, people, and outside organizations. At its initial stage, it is mainly focused on serving the nearby people who but as it grows larger more area will be supplied with the energy. The business is located in Ottawa in Canada.

The project has been structured to start its planning phase in the second month of this year, and it will take at least six months before its implementation time approaches.

## Project development stages

Various stages of development must be approved by the management. They include;

- 6  
1. planning phase,
2. Team organizational phase,
3. Prototype phase,
4. Implementation phase
5. Feedback phase.

The first three stages will take a maximum of one month each. The other two working duration is unmeasurable.

## Project resources

A project requires the collection of all resources that are necessary for it to be effective in its operation. The essential resources that need to be considered first are the personnel that will help in running the project to give out better services and deliverables. Personnel resource can, therefore, be grouped into professional, skilled, semi-skilled, and unskilled. All this category of people will work significantly by helping the plant to meet its objectives without many complexities. The payments for personnel, in this case, depends, those who are professionals will be paid a minimum of \$30 thousand per one, and only three of them will be required. Other personnel payments are scheduled in the table below.

The resources that will be used in the project are not that complicated because the plant will be tailored at using much of the sun's heat. The land is also another critical resource. This solar energy power plant requires a large area of land that <sup>2</sup>also depend on the circumstances of the installation of the solar cells. The construction of a 1MW mega solar power plant will <sup>2</sup>require land that has an area of around  $(1,000 \times 1,000) \text{ m}^2$ . The ground <sup>2</sup>must also be free of mountain forests and buildings that may intercept the sunlight. Another essential requirement in terms of construction is that the land should be flat. During transmission, high voltage cables are to be used, for instance, when transmitting <sup>2</sup>electricity from a mega solar power plant storage requires that transmission cables that are connected will be used. Power panels, inverters, and batteries are also relevant here.

## Project stakeholders

- The stakeholders in this project are entitled to ensure a smooth running of this project by observing the projects obligations and ways of operations. They include;
- Top management like the president of the project, the director's departmental managers and operating committee.
- The project team will work in hand by providing directions and supporting team members.
- Peers, who will be influencing others, and maybe carrying out partly investigations about the project. Customers, they will express their views concerning the services of the deliverables they are offered. Government,
- Contractors, it can be a construction foreman, network consultant, electrician, carpenter, architect, or anyone who is not an employee.
- Suppliers. Are also not employed, but they actively participate in the running of the project maybe through supplying material, and other equipment that is required.

## Business case

The basis of forming the project named above is to build up the company shortly that will use PV Panels to create energy from the sunlight and then sell it to the government organizations or any customer who might be interested whether companies or people. Additionally, the project is also entitled to improving its customer's satisfaction through training of customer service team. Another aim of the project is to make use of naturally available resources in producing energy that is less harmful to its customers. The project aims at using more than \$ 800 thousand including purchases of land for the building of offices and more other activities.

## Financial benefits

The financial benefits that are expected from the operations of the project include; increasing yearly turn rate by 50%, reduce employee turnover annually by almost 25%, increase sales revenue by at least 10%, increase earnings per share by 25% and lastly is to increase profit by 10%.

## Financial measures

The financial measures that will be used in the project include the payback period and return on equity (ROE). Payback period is determined using discounted cash flow or non-discounted cash flow. Sanghera (2019). Planning Quality and Risk Management. In *PMP® in Depth* (pp. 251-311).

On the other hand, return on equity (ROE) is the net income earned on an equity investment and it measures the investment return on the capital invested by respective shareholders. It is usually not less than the expected return on equity. Lastly, the proposed project will adhere to the rules and regulations about environmental conditions that are not harmful to the nearby population.

## Project revenue

According to "Shah et al. (2019) In Aligning Business Strategies and Analytics (pp. 81-94)". For this project to generate revenue, the following strategy should be followed;

1. Increasing the number of customers. This means that the project team will try as much as possible for them to bring more people to use energy from the sun. This happens whereby people will be educated on the advantages of using solar power rather than any other

source of energy. <sup>1</sup> And more customer usually means more money in the market thereby more revenue will be generated.

2. Another strategy is increasing the average transaction size. This strategy aims at attacking customers' purchasing power by improving it through upselling technique. This means that whenever a customer uses more of the energy, he/ she is given a discount concerning the exact level of power consumed set by the management team.
3. It is increasing the frequency of transactions per customer. This happens in the case where the marketing team is working upon their abilities to encourage its customers to continue using their energy and even increase their consumption. For instance, if the consumption of the power was at 100 joules, inspiring and convincing them can increase up to 300 joules. This is a clear indication that at the end of the day revenue will have increased.
4. Lastly, raising energy prices. Assuming that the volume, average transaction size, and frequency stay the same, increasing energy <sup>1</sup> prices will bring in more revenue depending on the rate of consumption. This will make the project to collect more tax.

### Types of cost and savings

The different examples of costs and savings include;

Direct damage, fixed price, indirect loss, variable cost, and sunk cost. In terms of savings, they can be hard or soft savings. Hard savings include a reduction in the cost of production, transportation cost or overhead cost while soft savings include, reduction in the need for working capital, cash flow, and increased safety in the workplace.

## Cost estimate

Wang et al. (2019). Social Project Culture: A New Project Management Culture to Promote the Sustainable Development of Organizations. *Sustainability*, 11(1), 202 suggested that cost estimating is the act of predicting the cost of completing a project with defined goals and objectives. It is the first element of project cost management that involves planning, monitoring, and controlling a project's monetary costs and operations.

However, the proposed project will have to incur some significant expenses before and at the beginning of its operation. First and foremost, the land is the central element that is considered as the priority. The area is already located at Ottawa city measuring (100×100) acres of land that will cost a price of \$ 70 thousand. PV panels are also essential equipment required for the running of the energy plant. Therefore, the proposed number of panels that will be purchased to help in distributing power are 300pv panels which cost a minimum of \$ 35,500 thousand. To store energy, the plant will also use some batteries. Each battery will have the ability to save the capacity of about 2,000MW of power. The cost goes at around \$ 20 thousand, and a minimum of 100 batteries will be needed. Still, on equipment's, charge controllers will also be required to control the amount of energy getting. Each goes for \$ 400, and only two will be used at the initial stage of the plant. Power inverters will be accessed at the cost of \$ 800 each, and the plant will use two inverters only. The total cost of buildings including offices is generalized amounting to \$ 250 thousand.

### Cost estimate table

| Particulars                         | No. of units | Cost per unit (\$) for the whole project | Total cost (\$) |
|-------------------------------------|--------------|------------------------------------------|-----------------|
| Professionals Project Manager       | 3            | 30,000.00                                | 90,000.00       |
| Skilled                             | 10           | 10,000.00                                | 100,000.00      |
| Semi-skilled                        | 15           | 10,000.00                                | 150,000.00      |
| Unskilled                           | 15           | 7,500.00                                 | 112,500.00      |
| Land ( 1000 x 1000 ) m <sup>2</sup> | 1            | 70,000.00                                | 70,000.00       |
| PV panels                           | 300          | 117.00                                   | 35,300.00       |
| Batteries                           | 100          | 200.00                                   | 20,000.00       |
| Charge Controllers                  | 2            | 400.00                                   | 800.00          |
| Inverters                           | 2            | 800.00                                   | 1,600.00        |
| Building Including Offices          | 1            | 250,000.00                               | 250,000.00      |
| Total                               | -            | -                                        | 830,200.00      |

## Summary of the project

Free energy project it's a project that aims at using the available natural sunlight to produce energy that can, however, be used by the government or any other consumer who is ready and willing. The main product of the project is the supply of energy. It will be supplied through wires and other possible means that will be discovered by the expertise when the project is running.

<sup>1</sup> With the collaboration of the project team members right away from the project manager who is the leader and others including sponsors and supplies, assure that the services will be of high quality that will meet the satisfactory level of its consumers. The team is also expecting to expand the project to other cities not only in Ottawa city <sup>1</sup> so that it can pass its services to other parts of Canada. A transparent platform has been created that is very open and free where every consumer will be able to move his suggestion, complaints, or appreciation to the project company.

A great move has been taken into account especially concerning the supply of energy where consumers are assured of no cases of energy shortages when the project commences its operations. The research about <sup>1</sup> the location of the project has been proved by the relevant authorities including the Environmental Assessment Team, and the project is of no harm to the people living around it.

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