Sample business plan on biomass investment in europe

Business, Industries

Business

Introduction

Renewable energy has been a talking point in the recent years with the dependence of carbon fuels increasing among countries. Other factors like the depletion of the ozone layer and long lasting health effects as a result of use of nuclear energy has led to the rise of the bio fuels industry as a suitable and dependable replacement for the other sources of fuel. Biomass industries in Germany are currently playing a very significant role in the production of energy and are predicted to very key contributors in the coming years. The industry is not only important as far as energy is concerned but even other economic factors like employment and rural development being a subsequent advantage of it. Germany is among the countries that are putting great efforts in achieving the objectives of the EU Commission Biomass action plan that was drafted in 2005 in order to promote the growth of the renewable energy industries all around Europe. Germany is currently, leading the way ahead of other European countries in the use and setting up of renewable energy industries. With great pressure from the economy, the question the choice of renewable energy and its affordability, Germany has still not lost its vision of attaining 45% renewable energy supply by the year 2030. Currently Germany has made great efforts in promoting the use of renewable energy where 25% of all the energy in the country comes from the use of renewable energy. They have a vision of seeing the departure of nuclear energy where it will be replaced by other renewable sources of energy including biomass. This business plan seeks to

identify the opportunity and the effects a biomass industry will have on the environment, people and the nation’s economy.

Project description

The Biomass plant will be tasked with producing around 10Mgw of electricity and also heat for around 40, 000 homes. Where small industries are present, the number of households that will be supplied with the electricity will be much lesser.

The plant will use scrap wood and other waste products from the lumbering industries. It will also utilize any other material from the environment in accordance with the national environmental act.

The conversion of the biomass to energy will employ the thermal biomass conversion where coal will initially be used but the industry will then make use of its own produced heat and electricity to run its operations.

70% of the company shares will be sold to the public while the private investor will own 30%.

Objectives

The biomass investment will increase the percentage share of renewable energy in order to bring closer the country’s target of obtaining 45% renewable energy by the 2030. The investment will also have an environment in consideration as it will reduce the emissions of the greenhouse gases from small industries, homes and even motor vehicles. It will also serve as an alternative to the use of nuclear energy that has been greatly discouraged due to its adverse health effects on people and the greater risk of collateral accidents that could arise from them. It will also play

a role in the reduction of dependency in fossil fuels as we come closer and closer to exhaustion of the hydrocarbons. Wasteful land can be put to use by putting up a biomass plant on the land that can hardly be used for any other purpose. It will provide employment opportunities especially to the residents of the affected area.

Marketplace and Evolution Motivators.

The government has made great efforts to subsidise bio industries in the country in order to provide energy security for the future while the hydrocarbons of the earth's crust come closer to the edge.

The Biomass Action Plan the European Union drafted encouraging all the countries of Europe to rely more on bio fuels that will still be available long after we have exhausted the oil fields of the earth.

Positive attitude of the residents of Germany toward the use of bio fuels despite the recent increase of fuel prices.

Promoting a healthier society by using more health friendly sources of energy.

A projected decrease in population in the coming years will provide more arable land that the government has planned on using it to grow energy crops. This will in turn serve as a source of raw material for the plant.

Biomass Potential

Germany has been ranked top among the wood producers of Europe. Most of the biomass industries in the country run on this wood. The government also has set up measures to ensure there will be a sufficient supply of wood in the future creating the opportunity for the rise and growth of the biomass

industries in the country.

High availability of energy crops in the country will serve as a raw material for the biomass plant. The country is currently utilizing around 17% of the land to grow this crops and is still strategizing on the methods to increase this in order to support the growth and evolution of biomass industries.

Financial Analysis.

Based on the industries that are almost accurately similar, the average cost of setting up this plant will be around 30M€. The close comparisons were taken from three biomass plant in the country which in several ways compare to the proposed business. The biomass industries of Brunsbüttel, Flohr and that of BHKW Gropiusstadt. The industries in Brunsbüttel andFlohr both produce 7. 5Mgw of electric power. The both cost 24M€ and 25M€ respectively to put up. The one at BHKW Gropiusstadt produces 20MW. All the required factors for the business were drawn from this three industries that were benchmarked each contributing a share to the proposed budget of 30M€. This is inclusive of the labour and government taxes and fees and should see the entire project to completion.

The industry is estimated to have 480 employees during the construction stage. 100 employees including management will be employed as fulltime employees once the construction of the plant is over. 50 will be tasked with maintaining the plant while the rest carry out cleaning and other activities like loading and offloading of vehicles, drivers, etc.

The government has placed subsidies for renewable energy industries that will make the cost of installing and operation lesser for the biomass plant

which falls in this category. Germany has the highest subsidies on renewable energy than any other country in Europe.

The industry is also going to experience more revenue for carbon trading that is awarded to industries that are making efforts to conserve the environment in their operations. Since the biomass industry will be reducing the amount of greenhouse gases in the atmosphere, it will receive some revenue.

The project is estimated to serve a total of 40000 households assuming that there will be no industry that will be operating using the energy from the biomass plant. The average electricity usage of households in Germany is around 1731Kwh per year. With the current electricity prices in the country at 6. 2cents per KW/h:

Total revenue from only electricity to the plant

No. of households = 40, 000

Consumption rate = 1731 per year.

Total consumption rate = 40, 000 * 1731

= 69, 240, 000 KW

Revenue = 69, 240, 000 * 6. 2/100

= 4, 292, 880€

Operating costs of a biomass plant are averaged to be between 9 and 20 % of the total cost of electricity.

(20 +9)/2

14. 5%

14. 5/100 * 4, 292, 880

= 622, 467. 60€

Revenue after operating costs = 4, 292, 880 – 622, 467. 60

= 3, 660, 412. 40€

Average cost of bagasse used in producing 10 Mgw of electricity

119€ = 1ton of biomass in Europe.

0. 72kg can produce IKW/hour of electricity

1000kgs (1 ton) can produce:

1000/0. 72 = 1388. 8889 Kw

10/1. 3889 = 7. 2 tons of biomass

119€ = 1ton of biomass

Cost of biomass = 7. 2 * 119

= 856. 793€

Revenue after cost of raw material = 3, 660, 412. 40 –856. 793

= 3, 659, 555. 607€

According to the energy needs of Germany and its neighbours considering also the high prices of electricity in Germany, the return on investment (ROI) is very high for any energy producing industry including the biomass ones.

Return on Investment. (ROI)

ROI = (Gain from investment – Cost of investment) / Cost of Investment

The estimated ROI of the biomass plant is:

Gain from investment = 3, 659, 555. 607€

Cost of Investment = 622, 467. 60€

ROI = (3, 659, 555. 607€– 622, 467. 60€) / = 622, 467. 60€

= 0. 49

= 5%

REO (Return on Equity)

Return on Equity = Net Income/ Shareholders Equity

REO = 3, 659, 555. 607€/ 0. 7

2, 561, 688€

SWOT Analysis

Strengths

The major recognizable strength of this project is the fact that it has the backing of both the Government and international bodies in the world. Unlike other countries, Germany has made great efforts in trying to reduce the dependence in hydro-carbons and nuclear energy. Instead, it has moved on to adopt renewable forms of energy as the use of biomass. In order for the German government to encourage people to invest in bio fuels industries it is carrying out many promotional activities and offering subsidies and some required support. International bodies like the European Union has already put forward an action plan that intends to oversee countries in Europe adopt biotechnology in their industries in order to conserve the environment and have some energy security in the future. There are good chances of the project being successful due to the support it will receive from the government and International bodies. A large resource base in Germany where raw materials are available is also another strength that may favour the growth of this industry. The availability of trees and energy crops is not a

problem in Germany. The government is even planning on increasing the amount of land used to grow energy crops in order to ensure the survival of the upcoming bio fuels industries. The continuous rise of other industries will increase the demand for power that may result to the prices of electricity going up meaning greater profits are realized. The expansion of the industrial sector in the country will call for more electricity that fossil fuels will not be in a position to provide.

Weaknesses

There is a major outcry in the country after the electricity prices rose by 20%. This was as a result of the subsidies the government is giving to bio fuels industries. Germany currently has the highest electricity prices in Europe. Though there are many benefits that are associated with the use of the bio fuels, electricity has become a burden for the poor. A major debate on whether to go for fuels that are not environmental friendly but cheap or whether to go for the expensive bio fuels that are environmental friendly. Bio fuels cannot produce cheaper fuel compared to the nuclear energy industries that are trying to be faced out by the government. The government is also now undergoing extra costs in carrying out research that will help cut down the costs of biomass energy. Another weakness is the animal waste is not very useful in the industry as its conversion cannot produce a sufficient amount of energy.

Opportunities

Fossil fuels will gradually come to their limit in the coming years. With many countries still dependent on this fuels even after the warning of their

exhaustion, energy crisis might be a very big problem in the future. Fuel prices might drastically rise, and well-established industries might realise very big profits. Nations will all have to migrate to the alternative means. The biomass industry might start exporting electricity to the countries that will not have established themselves.

Threats

Nuclear power might prove to be the greatest threat to the greatest threat to the bio fuels industry as it is a cheaper and effective alternative source of energy compared to the use of bio fuels. Nuclear energy does not require large pieces of land where raw materials are planted. Biomass requires extensive tracks of land to be used in planting trees and energy crops to serve the bio fuels industry. It is also far much cheaper compared to the use of the bio fuels as biomass that are relatively expensive especially to the poor. Several countries have greatly adopted nuclear energy and as things get to their worst Germany might follow suit. The large pieces of land that have been allocated for the growth of energy crops may be essential for new purposes.

Conclusion

The bio fuels industry is a very promising sector to invest. Setting up a biomass plant might just be the greatest investment. It is majorly favoured by the fact fossils fuels will not be around for very long. Bio fuels industries will come along to replace the gone fossil fuels. It has the backing of the government and many investors may be willing to invest in this industry due to this. It will also provide a cleaner environment as it is a measure to curb

pollution. It, however, has its setbacks that may stand in the way of its evolution. Most notably is that it is very expensive to produce fuel from biomass that is currently an issue in Germany today. Electricity from biomass is not comfortably affordable for the poorer people of the country. It might also not rise to its desirable level due to expected competition from nuclear energy which is a cheaper resource than the use of bio fuels. Its advantages outweigh its disadvantages in the long run it still remains as a recommendable replacement for the fossil fuels. The biomass industry may be very expensive to start but still assures hope for the future. Citizens of a country should not only look at the expensive side of it but also should consider the benefits the industry comes with. Some like good health may not be easily recognisable to a layman’s eyes but remains among the key benefits of this industry.

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