

Environmental proposal essay samples

[Environment](#), [Electricity](#)



Introduction3

Background3

Research questions4

Research objectives4

Rationale for the research5

Plan for work6

Literature review7

Wind power evaluation9

Tourism impact of wind energy on Arroyo10

Costs11

Benefits12

Methodology12

Data collection13

Primary sources13

Secondary sources14

Data analysis14

Reliability and validity14

Ethical considerations15

Conclusion15

References16

Introduction

Background

The prospect of increasing energy prices in Puerto Rico has become an aspect of concern in the societal framework. Heavy reliance on fossil fuels

has led to the ever increasing prices of fossil fuels which have posed a daunting environment to the middle and low income. The need for investment into alternative energy sources has generated the need for plausible proposals in regards to the alternative energy solutions available. Generating plausible alternatives has become the most plausible solution towards curbing or handling over reliance coupled with depletion of the environment as a result of fossil fuel energy. Furthermore, the prices of electricity have been on the upward trend. Thus, as a plausible approach, Puerto Rico should invest into other available energy sources such as wind, solar and so forth to ensure sustainability in regards to the energy sources. Though the country has invested into various alternatives apart from the burning of petroleum, success has not been evident. As such, the implementation facet of the approach has been evidenced by various bureaucracies and challenges. As such, the main challenges evident have been the initial cost and the inability of the various organizations to produce electricity within a lower price point. Hence, diverse pundits have come up with various solutions to the prevailing energy crisis in the nation. As the first solution, the inculcation of anerobic digestive system would be adopted. Anerobic digestive system, in reference to Pasqualetti & Richters (2011) entail a biochemical process that is characterized by complex organic materials are broken down using microorganisms within a controlled anoxic environment. Pasqualetti & Richters (2011) further assert that the aforesaid process has two main outputs. As the first and principal facet, decomposition of organic matter coupled with reduction of the solid materials. Secondly, the production of biogas prevails which can be utilized in the production of

electricity. As the second posed solution to the energy crisis in Puerto Rico, the inculcation of wind energy is a plausible source of electricity. Wind energy, as per Pasqualetti & Righters (2011) denotes generation systems that are constructed towards harnessing power of the wind. Using the aid of wind turbines on the wind towers, the harnessing of electricity prevails. The various wind energy systems can generate that can be inculcated to solve the energy crisis in Puerto Rico. As the third solution, many pundits have recommended the internalization of solar energy. Solar energy denotes a radiant light and heat emanating from the sun which is harnessed through the ever evolving technologies such as solar heating, solar thermal electricity and photovoltaic. Through the inculcation of the diverse technologies, plausible generation of electricity is bound to prevail. Nonetheless, nurturing sustainability within their energy source approach, the country will manage to reduce the negative impact of fossil fuel on both the community and the biodiversity. This, this proposal will evaluate the effectiveness of incorporating of wind energy in Arroyo a city 57 miles from San Juan in Puerto Rico.

Research questions

- What denotes wind energy?
- What are the tourism benefits of wind energy?
- Is wind energy cost effective in its initial installation?
- What are the effects of incorporating wind energy?

Research objectives

Wind technology has become an approach that has been evident in various developed countries. Sweden, Germany and other diverse developed

countries have taken the front step towards sustainable energy. As such, through the inculcation of wind energy, many pundits assert that diversification and beneficial outcomes are bound to prevail. However, as a developing economy Puerto Rico exudes diverse prospects in regards to successful inculcation of wind energy. Most specifically, Arroyo, with diversity in landscape, poses a plausible city in which the various pundits can incorporate the wind turbines construed towards generating electricity. Thus, the main research objectives include:

Rationale for the research

Sustainable energy is imperative within the operational mandate of any society. The inculcation of sustainable energy is essential towards ensuring a more plausible environment for the various individuals in the public scene. Thus, from the evaluation of Arroyo and the research on sustainable energy, it is significant to undertake the research based on:

- The need for a more plausible source of energy since the use of petroleum and other carbon based sources is extensively expensive
- Sustainable energy leads to plausible outcomes such as generation of employment in regards to the public scene
- Sustainable energy is a proper approach towards ensuring a more widespread accessibility to energy to the local community.

Plan for work

A grantt approach in the dictation of the diverse activities that are to be undertaken in the research mandate will be incorporated. Thus, a Grantt chart denotes an alignment of the diverse activities that will be undertaken in the research project. A grantt chart, as a layout of the diverse activities, is

a pictorial representation of the activities to be undertaken within the research process. Thus, a plan for work, using the Gantt chart is as follows:

Literature review

In the analysis of wind technology and its impact on the economy of Arroyo, it is fundamental to analyse what it inculcates. Admittedly, analysis into the various issues circumnavigating the wind technology in the city is of critical importance. Hence, in this chapter I will look into the wind technology, impact on tourism and cost benefit evaluation

Climatic change has been the hugest and most urgent environmental peril that we face. As such, the greenhouse gases that have been held responsible have been as a result of human activity. The most responsible greenhouse gas has been carbon IV oxide which is generated when fossil fuels such as coal and oil are burnt for energy. Continuously, the increasing levels of CO₂ have significantly led to the increased global temperatures. The increased temperatures have caused the unpredictable weather patterns leading to more violent storms, droughts, floods, rising sea levels which have become a threat to the eco systems. For the avoidance of the catastrophic climatic change, countries have been on the front steps in curbing emissions through setting up of policies and mandates to be followed by the various key players. Majority of the countries have embarked on the task of switching the forms of energy to safer and environmentally positive forms that reduce the levels of CO₂

In the majority of developed economies such as the greater UK and parts of US, most of the analysts' state that a third of the emissions emanate from the power stations which are ever producing electricity. Additionally, other

emissions from the stations have been a crucial contributor to the acid rains that are threatening the wildlife. Nuclear power stations, though not within Puerto Rico have been a source of radioactive toxic waste. In reference to Elliot (2003), wastes from nuclear reactors are bound to last for tens of thousands of years. Additionally, safe storage mechanisms have been non-existent to date. As well, the nuclear power stations have posed a major hot spot for terrorist attacks. Hence, many of the analysts view investment into nuclear stations as not the right path to take for many developed and developing nations. However, the demand for energy is ever increasing both within Puerto Rico and its various cities. Hence, despite the significant maneuvers to reduce emissions, cleaner ways of electricity generation is better as opposed to the prevailing pollutant forms. As such, investment into renewable energy has been a proper step into the future of cleaner safer and more sustainable environment for the generations to come.

Wind power evaluation

Electricity generated from wind has been the best developed and available renewable energy to date. Technological advancements made have enabled tapping into the wind technology to enable electricity generation.

Accordingly, wind power depends on relatively simple mechanical processes. Once built, the wind turbines have quite minimal running costs. Additionally, the wind technology has ever been relying on the aeronautic industry which has contributed heavily to the technology. Hence, the fuel is free, inexhaustible and there are absent waste products. Furthermore, it has meant that wind energy can compete formidably with the cost of energy based on the conventional fossil fuels. Further, the on-going rise in fuel

prices means that wind energy can become a competitor and energy source of choice. As such, wind turbines operate under the principles of conversion of wind's kinetic energy into electricity. As such, wind farm proposals may be for a singular turbine or groupings of many in one location. As such, the wind turbine is consistent of four main parts that give them their huge size. The four are tower, nacelle, blades and the transformer. As the first part of the turbine, the tower varies in size from 35 meters upwards. As such it is tubular steel which has a typical base diameter consistent of 3-7 meters. As such, the tower displays a slight tapering to the nacelle. In respect to Elliot (2003), larger towers require larger diameter base. As the second part, the nacelle is the engine of the turbine or the most important part. It contains the imperative components of the turbine including the gear box and the ever efficient generator (Elliot 2003). A yaw mechanism is used to turn the nacelle in order for the rotor blades to face the winds prevailing. The third parts are the blades. Blades capture and are in turn set into motion by the wind. In most cases, the blades are made up of glass which is reinforced by plastic or wood epoxy. In other instances, the blades can be made of aluminum or steel. The modern blades are made up of three blades. As such, the blades may vary in terms of the rotor diameter from 35 meters upwards. As the last main part, the transformer is the device used for changing voltage of the alternating current. Electricity in reference to Elliot (2003) is typically generated at a less than 1000 volts by the ensuing wind turbine. Accordingly, the transformer "kicks up" the voltage in order to match the national grid. As such, the electricity may be housed either inside of alongside the tower. As a complementary part of the wind turbine, the base

is typically of 7 and 18 meters square which are consistent of a hard and formidable standing area at the ground of each turbine (Elliot 2003).

Accordingly, with such a turbine, generation of electricity may ensue hence profiting the country. However, issues of development of wind farms, their impact on the Arroyo's tourism sector are a facet of evaluation.

Tourism impact of wind energy on Arroyo

Costs

The initial process of inculcating the wind turbines to solve the increasing prices of fossil energy coupled with reducing the costs of electricity is highly cost demanding. As such, the \$ 1200000 is highly plausible in setting up the first medium sized turbine. The medium sized turbine will manage to generate the first 500kw. Despite the low voltage, a partnership approach between the government and the diverse businesses will generate extensive capital construed towards increasing the wind turbines to more than 20 that will generate plausible levels of electricity.

In the growth and development of the wind farms, there are various costs that many analysts view as impediments to the tourism and economic sector. Admittedly, many view that the wind farms have a foreseeable impact on the visual aspect of the natural environment. Accordingly, through the wind farms, visual impact is greatly minimized since many people view manmade structures negatively when incorporated into the natural heritage. Further, the prospect of the distraction of the behavioral aspects of the migratory birds is a key notion to ponder. Certainly, the setting up of wind farms may impede the migratory routes, feeding habits and other behaviors that circumvent the various local birds in Arroyo.

Benefits

The development prospect of wind farms in Arroyo has been regarded by many as a major booster of the Arroyo and Puerto Rican reputation. As such, many of the individuals view Arroyos as an environmentally viable location to visit. Admittedly, the support for renewable energies evident from the Puerto Rican government initiatives is a clear indicator of the environmentally friendly step undertaken.

As another benefit, many pundits view wind farms as a lucrative tourist attraction. As such, the incorporation of visit centers has been a great benefit to the tourism sector since visitors are flocking in to see the various wind farms in the city coupled with the presence of sandy beaches and plausible weather.

Finally through the wind farms, an infrastructural development has been manifested. Admittedly, the wind farms have posed a great benefit to the inaccessible areas since through them; the development of the various inaccessible areas has been incorporated.

Methodology

In this study, the term hall approach will be used in the interview of the various officials and visitors in Arroyo. In the aforementioned methodology, the target population of 100 interviewees is welcomed into a rented hall for a short discussion of up to half an hour on the various issues. As such, in the topic of analysis will be the importance of wind energy and impact of wind farms on reducing the cost of energy. However, the potential benefits in regards to wind tourism will pose as a slight avenue of discussion. However, on the analysis of the contentious topic of importance of the natural

landscapes and the natural scenery, exclusions are to be made. After the interview, questionnaires will be handled out to the various businesses in Arroyo. Through the questionnaires, questions based on business performance prior and after the inculcation of wind farms will be answered. Further, the businesses willing to give out their statements will play a formidable role in the analysis of the business performance in terms of electricity costs. Through the aforesaid methodology, the following activities will be undertaken in the research proposal;

- Initial meeting with respondents 3 weeks
- Questionnaire 2 weeks
- Desktop auditing of reports 4 weeks
- Drafting of the key elements 1 week
- Write up 1 week
- Final report 1 week

Data collection

In data collection, the two important sources that play an extreme role to the access of data to the study are;

Primary sources

The primary sources will mainly be inclusive of the use of questionnaires, interviews and the sampling of businesses, officials within the city, tourists and sample of Arroyo population. As such, questionnaires will be meted to a sample of a hundred chosen individuals randomly who will comprise from the aforementioned portions of study. On the other hand, interviews will be made in terms of the various organizational and national park managers.

Secondary sources

Admittedly, the secondary sources will comprise of the annual reports from the various businesses as per the various electricity costs incurred within Arroyo. Accordingly, the reports will be before and after the inculcation of wind technology to the city. As well, through the reports from the various businesses a vivid picture will be painted in respect to the impact of the prevailing energy sources. Additionally, reports from the complementary sector players will be handled. Accordingly, some of the complimentary players to the business sector include individuals who rent abodes, institutions and so forth.

Data analysis

Data attained will be looked at through the use of two critical strategies. From the interview undertaken, it is evident that it will be in form of qualitative research findings; hence analysis will be done through note taking. Moreover, from the sample done of the various participants, measurements will be done through central tendency and graphical representations of the findings from the various reports (Allan 2009). Accordingly, the spread of the various scores will be in terms of the costs incurred among the diverse business which will be noted down through averaging the totals.

Reliability and validity

When interviews are being conducted, an aspect of concern will be social bias in form of ensuring reliability and validity of the data used. Hence, when conducting the interview, more questions will be made to the interviewees' in order to assist further to establish the truth. On the flip side, quantitative analysis of the sample questions and reports will greatly rely on the various

theoretical models generated previously.

Ethical considerations

When conducting the study into the potential impacts of wind farms and associated grid infrastructure on the Arroyo business sector it is important to take heed of the impact of the information obtained from the various respondents. Admittedly, the information is of pivotal importance and may cause loss of employment to the various respondents such as electricity generating businesses when they give information regarding to their performance index. Hence, in carrying out the interviews, it is important to omit names through the incorporation of other terms in place of the respondents. The use of names such as correspondent a, interviewee A and so forth will avoid future cashes and negating issues. Further, the questionnaires that will be used will not include too personal questions which may invade the privacy of the various respondents. Hence, the various respondents should feel free and in an open environment in which they will answer the questions openly without rendering the study void.

Conclusion

Wind energy is a plausible approach within the sustainability mandate in any country. Most fundamentally, Puerto Rico is highly reliant on fossil energy which has led to the increased costs of electricity that have led to the losses incurred among the various businesses. As such, from the above evaluation, it is evident that wind energy is a plausible strategy towards facing the diverse challenges posed. As such, the prevailing beneficial aspects emanating from tourism and so forth are facets that require extensive research for Arroyo city and the wider Puerto Rican government to

determine the viability of the approach. Through a partnership approach between the private and public stakeholders, significant changes are bound to prevail with beneficial outcomes evident as evaluated. Hence, wind energy should pose a formidable tool within the energy industry in Arroyo and Puerto Rico.

References

Elliott, D. (2003) *Energy, Society and Environment*, second edition. London: Routledge.

Devine-Wright, P. (2005) Local aspects of UK renewable energy development: Exploring public beliefs and policy implications *Local Environment* 10(1) 57-69

Krohn, S. and Damborg, S. (1999) on public attitudes towards wind power. *Renewable Energy* 16: 1-4, pp. 954-960.

Redlinger, R. Y., Andersen, P. D. and Morthorst, P. E. (2010) *Wind Energy in the 21st Century: Economics, Policy, Technology and the Changing Electricity Industry*. Basingstoke: Palgrave Publishers.

Heywood, I., Cornelius, S. and Carver, S. 2011, *An Introduction to Geographical Information Systems*, 2nd edn, Essex, US: Pearson Prentice Hall.

Hanley, N., Shaw, W. D. & Wright, R. E. (Eds) 2003, *The New Economics of Outdoor Recreation*, 1st edn, Cheltenham, US: Edward Elgar.

Pasqualetti, M. J., P. Gipe and R. W. Righter (Eds.), (2011) *Wind Power in View – Energy Landscapes in a Crowded World*. New York: Academic Press.

Revill William, 2003, *Tourism public policy and the strategic management of failure*. London: Routledge.

Anthony Henry, 2008. Understanding strategic management. New York: Wiley.

Allan Afuah, 2009. Strategic Innovation: New game strategies for competitive advantage. New York: Routledge.

Ron Basu, 2004. Implementing quality: A practical guide to tools and techniques: enabling the power of operational excellence. Chicago: Cengage Brain.