

## MEMORANDUM [1]

To: Gary C. Thomas  
President/Executive Director DART [2]

From: S. Student

Date: February 4, 2017

Subject: Proposal for Determining the Profitability of Wind Power

### Introduction [3]

The popular forms of energy such as coal and oil are slowly diminishing, increasing the need for alternative forms of energy. The DART light rail system uses 5 million kilowatt hours per month of energy to run and will be requiring more energy soon because of future expansions planned for the rail system.[4] Since so much energy is used it would be ideal to find a different energy source to power the rail lines. Alternative forms of energy are becoming very popular and the research devoted to finding new sources is increasing every year, making it easier to find a new energy source to use.

### Statement of Problem

With the future expansion of the DART light rail system there will be larger energy consumption, meaning higher cost to DART. With conventional energy sources diminishing it is important to find and use as many alternative forms of energy as possible.

### Proposed Solution

One possible solution for the increase of power needed for DART and the diminishing energy sources is the use of wind power. Wind turbines, defined in Science Year as devices that extract energy from the wind using large, fanlike rotors (typically with three blades) connected to electric power generators, provide just as much power as conventional energy sources and produce clean, nonpolluting energy. Using wind power would eliminate the need to use a third party energy company such as the ones they currently use.

### Scope

To assess the profitability of using wind power as an alternative power source I plan to use four areas of inquiry:

1. What companies currently use wind power, and what are the advantages and disadvantages of wind power, if any?
2. How expensive is it to transition to wind power?
3. Will the wind turbines be able to provide enough power for the rail line as is currently used.
4. What are the costs of leasing the land and building the wind turbines?

## **Methods**

Most of my data will be through secondary sources including publications on the use of wind power, a history of the DART rail system, and other information from websites and books about currently used wind power.

## **Conclusion**

There is a need for alternate uses of energy because of the declining stores of fossil fuels. By addressing the four areas of inquiry I stated above, I can determine the profitability of wind power for DART.

## **Tentative Bibliography**

[5] "Answers for the Environment." Siemens. Siemens. 03 Feb. 2017  
<<http://www.usa.siemens.com/answers/en/us/environment.htm?stc=153>>.

"Energy." Internet Public Library. Internet Public Library. 3 Feb. 2016 <<http://ipl.org/div/subject/browse/sci14.00.00/>>.

"Newsroom DART Rail Facts." Dart.Org. DART. 4 Feb. 2017 <<http://www.dart.org/newsroom/dartrailfacts.asp>>.

Snow, John. "Fierce Winds." Science Year 2012. 2012.

"Wind Data and Information." Energy Information Administration. July 2016. Energy Information Administration. 4 Feb. 2017 <<http://www.eia.doe.gov/fuelrenewable.html>>.

## Notes

[1] Uses appropriate memorandum format

[2] Provides specific audience for potential report.

[3] Uses headings to provide visual emphasis for various parts of the memorandum.

[4] Includes details in the proposal that are directed at the specific business entity.

[5] Offers some specific useful sources that might be used.