SOLAR PANEL REPORT

We did a project for the Condo Association to help make a decision on solar panels for the apartments. We worked at Mr. Jeff’s home on these dates: 1\6\10-1\8\10, 1\6=1 hour, 1/8=4 hours.

The problem we are trying to address is that people are paying for electricity when they could leverage solar power instead. By installing solar panels on the Condo Association condominiums they would not only be saving money but also making the apartments environmentally friendly. Dominion Power’s current average rate is $.05 per kilowatt hour (kw/h). If we implement the suggested solar panel system (see below) they could potentially save $123 per day on average using the 315 Sunpower solar panel. This would make a result of $44,895 per year.

We performed the following tasks:

* Researched solar panel construction and their purpose;
* Determined solar energy per square meter using an insolation map;
* Calculated the usable area of the roof, the size of a solar panel, and how many solar panels we need;
* Researched the cost of a solar panel system;
* Researched current trends in solar technology;
* Calculated the average kilowatt/hours per day for the roof.
* Wrote a letter to Mr. John Doe of the ABC Assocation.

After our analysis, we submitted a suggestion to install the 315 Sunpower solar panel; the 315 denotes the wattage output. This Sunpower solar panel has a very high efficiency (19.6%) compared to other brands (typically 12%) (Smith, 2010), meaning more solar energy will be converted into electricity. The Department of Energy is using the same brand of solar panels, but a different model with different wattage output (Kline, 2011).

We calculated the cost by dividing the area of the building by the area of each solar panel. We figured out that we can place 39 solar panels on the roof. All the solar panels would make 12,285 watts maximum. A RecSolar (http://www.recsolar.com/) salesperson told us that the cost of a solar system is $6 per watt, so we multiplied the cost by the maximum watts. That ends up as $73,710 for the cost of installing a solar system.

One of our future goals is to help put a solar panel up for a buiding or a home, maybe the ABC Association building. Another goal is to reduce Dominion Power’s need for coal to make power because when you burn coal it creates bad fumes and that helps pollutes the earth. We would like to tell Dominion Power in a letter to check out the solar panels because for people who do not have solar panels on there house could use Dominion Power’s solar energy and not be polluting the earth. Since Dominion Power doesn’t pay any money for there solar power except for installing the solar panel system Dominion Power might lower their power bill (or solar bill). Some of the ABC Association’s future goals are putting rain barrels and a compost for the condominiums. We suggested the association to appoint a organizer for the effort.

Kline, M. (2011, January 15). DoE Practices what it Preaches. *This Year in Energy*, pp. 15-20.

Smith, J. (2010, July 1). 315 Sunpower Solar Panel Review. *Energy Matters*, pp. 60-65.