

*2011 CL&P Live Green - Win Green Contest Essay*

*Submitted by: The RHS Green Team*

*Rockville High School*

*Vernon, CT*

*“Start by doing what is necessary, then what is possible, and suddenly  
you are doing the impossible.” –St. Francis of Assisi*

What does it really mean to “go green”? We believe “going green” means reducing waste as well as conserving energy and precious resources. It means working to maintain an ecological balance, and making the right change at the right time. At Rockville High School, we see “going green” not as a choice, but as a responsibility. Most importantly, students know that we need to make significant, sustainable changes to our school as well as to our lifestyles.

At Rockville High, we have already taken great strides to live green. If the RHS Green Team were to win green, meaning the twenty thousand dollars first place prize, our plan would be to invest in a 5 kW solar photovoltaic system to be installed on the school roof, or mounted on poles above the walls inside our more secure courtyard area. We would solicit advice from several reputable, experienced solar PV installers. Our school has the ideal location for such a system because we are on a hilltop. The panels could receive unrestricted sunlight all day.

The benefits of solar PV power are many. The panels do not emit greenhouse gases; they do not produce leaks or spills and require very little maintenance. Moreover, they are less politically controversial than wind turbines, because they are silent and often

hidden from view. They are durable and versatile. They eliminate many safety hazards because they have no moving parts. Solar panels made today are far more efficient, approaching 14-18%, than those manufactured just five years ago. Many manufacturers offer warranties that last for up to twenty five years. Because of recent advances made in the production of solar photovoltaic cells, solar energy is becoming a more cost effective, clean energy alternative. As our government continues to set new goals and incentives for significantly increasing the percentage of clean generation of electricity, costs will decrease, demand will increase, and more green jobs will be created. Each day, the sun provides Earth with enough energy to power the world for four to five years. Therefore, it is imperative that we take full advantage of this free, enduring energy source. As a nation, we need to reduce our carbon footprint that causes greenhouse gasses. We need to become far less dependent on finite sources of fossil fuels, especially if such fuel comes from politically unstable countries. We must conserve.

As a team, we have spent considerable time researching what significant, sustainable, and feasible green options are available. We have put a great deal of effort into contacting our school's business office and Connecticut Light & Power. We have compiled the information we were given and created a spreadsheet that shows the number of kilowatt hours used last year by the eight meters we have within the school facility (See Excel attachments: Appendix A; Figures 1 & 2). We were able to find that the school used 1,501,893 kWh last year and that the electricity bill for that year totaled \$123,643.89. We went beyond this, though, and calculated that our plan to install a 5 kW solar PV system can save on average about \$1,477 a year based on the current 11.723 cent charge per kWh from the power company. The entire solar PV system installation

can pay for itself in about fourteen years at current electric rates. But because the grant money can pay for most of the installation costs upfront, and electric rates tend to rise annually, the payback should begin almost immediately.

A new solar panel system at Rockville High School will not only make a difference helping our environment; it will also have a lasting impact on the school as well as in the community. By applying the prize funding from the "Live Green, Win Green" contest toward implementing the solar panel system, we will be sending a strong, enduring, environmentally friendly message to the entire community. They will realize the true meaning and importance of going green.

We are in the process of proposing a new interdisciplinary educational initiative referred to as STEM (science, technology, engineering, and math). This initiative will include a new course called Principles of Engineering which involves mechanical, fluid, electrical and thermal concepts inherent in all technology systems. In addition, students will explore green energy concepts, environmentally friendly choices, clean, renewable energy alternatives and career awareness. Installing the new solar PV system will demonstrate our commitment to harnessing a sustainable, renewable and free source of clean energy while further enhancing the educational opportunities for future generations of students. We envision the solar PV system's power meters located inside our proposed STEM lab. Just imagine - science, technology, engineering and math students working together, monitoring the outside environmental conditions, studying the energy input and output, and determining the system efficiency on any given day. Students will gain invaluable hands-on experience and knowledge about the design and benefits of a solar

PV system. The benefits to the community are clear: The project would save Vernon taxpayers thousands of dollars in school utility costs over the lifespan of the project.

Our Green Team has plans in case we were to place as runners-up. With the five thousand in prize money, we would purchase some alternate energy training equipment for the new Principles of Engineering course, such as portable solar PV panel setup, possibly a 1-2 panel domestic solar hot water system, and/or a small scale wind turbine generator system. This would greatly enhance the educational experience for students and help raise awareness about “green collar” job opportunities.

Going green doesn't mean that we have to make huge changes in the way we live. Any change that is met with determination, motivation, and inspiration is bound to make a difference. The Rockville High School Green Team is determined and committed to providing our school with renewable, sustainable, clean energy. But more importantly, we hope to raise the level of public awareness of what “going green” is all about, especially with the publicity we will receive if we win the contest. This project will provide a significant step forward in helping us change people’s attitudes within the community to embrace living green. That is why we are in it to win it!