



# MASSACHUSETTS CLEAN TECHNOLOGY AWARDS

A Program from The Foresight Project Inc; [www.theforesightproject.org](http://www.theforesightproject.org)



Region II: Central MA

Ryan and Ross Lagoy,  
Leominster High School

*"Solar TEC-fg\*: Into the  
Future and Beyond"*

\*"Solar Thermal Electrical Chemical fuel  
generator"

Brothers Ryan (a sophomore) and Ross (a freshman) attend Leominster High School in Leominster, MA. They both enjoy academic studies with mathematics and science as their favorites. Although brothers, they each bring an individual viewpoint to collaborative academic projects, with results that exemplify the non-linear power of two creative minds working together.

In addition to their academic studies, they also take part in a variety of extracurricular activities: Ryan was 2010 class president in his sophomore year, and enjoyed this leadership position as a way of contributing to his school. Ross is an active student council member, promoting fundraising to the entire school body. Both are members of the Leominster High School Renaissance Club, and both are also varsity lacrosse players for Leominster High School. As hobbies, they like to read, surf, ski, and sail. They are dedicated Christians and take part in a variety of community events and activities, including working as lifeguards and caddies in the summer and ski instructors in the fall. They credit their parents for the support that provides them with the inspiration and motivation for them to succeed in their many activities. They both hope that their time and energy will help in creating a cleaner and safer environment for the world to come.

## OUR PROJECT:

*The Question: Using a previously constructed solar concentrator, (a mosaic of mirrors, rather than one single and expensive mirror surface), will we be able to create a significant amount of energy in the form of electrical current, sufficient for conducting electrolysis?*

Present society has an increasing requirement for energy – at the same time that we are realizing that our past energy use is resulting in an emerging global catastrophe of unknown proportions. It is essential to push for newer energy-technologies and sustainable solutions.

Our experimental goal was to create a system that could obtain the useful element, hydrogen, using the sun directly as the power source. By combining the solar collector previously developed and focusing it on a double-vented steam pot, a device so ancient it was known and used over two thousand years ago, we believed that we would be able to create energy in the form of alternating electrical current, sufficient for conducting electrolysis of water, producing hydrogen, which could be used as a clean fuel source.

Perseverance in refining the system finally resulted, on February 24, in generation of approximately 0.5 volts of electricity, sufficient to conduct electrolysis and proving our hypothesis.