



# Energy Efficiency at Bioscience High School

## Phoenix Union Bioscience High School - Phoenix, Arizona

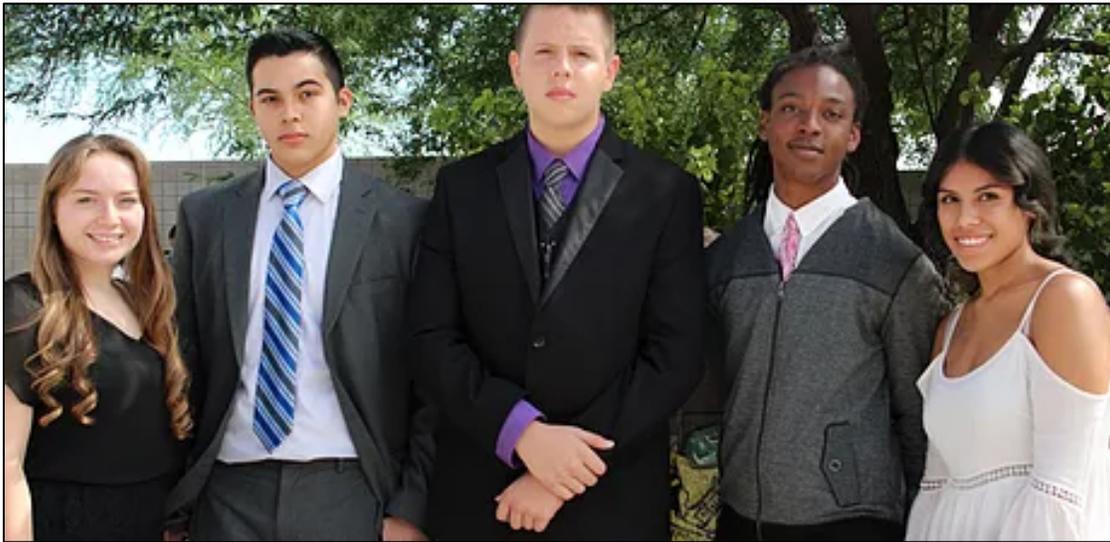


BioScience High School is a high school in the Phoenix Union School District, located in the heart of downtown Phoenix. The school's vision is to "cultivate critical thinkers, creative problem solvers, and compassionate citizens who are able to thrive in our increasingly complex and technological communities." It encourages students to engage with their community by providing resources such as internships, connecting them with local stakeholders, and challenging them to analyze a problem in their community and to do something about the issue at hand.

Bioscience High School is known for its emphasis on the sciences and mathematics, but what people don't know is that, throughout a student's school journey, he or she is learning about environmental sustainability. Students learn about creating sustainable choices in their day-to-day lives. The school embeds sustainability into its four-year curriculum. Bioscience sets the example academically but also with its energy-efficient techniques.

Some of the efforts within the school's Energy Conservation Program include implementing solutions to decrease the energy bill, such as making sure doors remain closed while heating, ventilation, or air conditioning is in use; switching off office machines at night and during vacation periods; and either turning off computers or programming them to be in "energy saver" mode when not in use. Lights throughout the classrooms have motion sensors that turn off if no activity occurs; a custodian also helps to ensure all lights are turned off. With all of the energy-saving techniques in place, the school saved \$22,050 from July 2014 through September 2016. These small changes saved 621,367 kBtu (thousand British thermal units), which is equivalent to 74 metric tons of carbon dioxide! That is equivalent to the amount of carbon dioxide produced by 16 cars in a year.

## Alternative Energy at Bioscience High School



At Bioscience High School, students have to deeply analyze a problem in the community and make an intervention. An example of the Sustainable Transformation Framework (STF) project is a group called Alternative Energy – three senior boys and two senior girls of a diverse and motivated group of students who are working for a sustainable tomorrow. Their objective is to create a community that utilizes sustainable and alternative energy technologies. They want to inform the community about the cost, benefits, and challenges faced with incorporating more sustainable practices into people’s lives. In order to make their ambitious goals into a reality, they created a solar charging station.

The solar charging station actually began many years ago when a group of students had the idea of creating a charging station that was also a carport where they could work on their biofuel car. For three years, a group of 14 students worked with professional engineers to create a design. The solar charging station was ready for construction in 2012. For a while, the project was discontinued until Alternative Energy saw the solar panels in the garage and wanted to put them to use so decided to continue on with it. The group installed the solar panels, repaired some panels, and put in some batteries to store the energy. Now, students can charge their phones during lunch or their laptop when they want to work outside. Completing the solar station was not only an educational journey but also a personal one that changed lifestyles. Diana, a group member of Alternative Energy, say, “While working on this project, I have become more energy conscious and do little things around the house to lower my family’s energy output. I think our next step is to look at how we can help people invest in solar energy without it being a huge financial burden.”

Completing the project was only the beginning for this group. It is currently working on developing an app and to have visitors interact with their solar charging station. The group also interns at Hope House, a local urban garden where Albert and his team mates “saw an opportunity to combine both Alternative Energy and Hope House’s mission.” An unused office space will be turned into a fun lounge that runs on solar energy.

■ *Griselda Solis, Student, Bioscience High School*