



Alternative Energy

Throughout its history PARI has been committed to developing state-of-the-art equipment to support research, education and public outreach. Our alternative energy systems not only fit within this part of our mission, but also provide PARI the opportunity to demonstrate to students, teachers, scientists and engineers how such systems can be designed and built to serve a practical application as an alternative to traditional electric power consumption.

There are currently 11 solar arrays and three wind turbines on the PARI campus. The solar arrays each have multiple panels and provide energy to operate the Optical Ridge instruments, seismometer, north tower weather station and cameras, magnetometer and the UNAVACO earth plate boundary observatory. On the Optical Ridge alone, there are two arrays with 18 solar panels each and two with 12 panels each. The four solar arrays provide 10 kW (10,000 watts) of clean power to operate sensitive research instruments and networking equipment at multiple discrete locations. The three wind turbines each provide 900 watts of energy. One of the turbines is on the northwest tower, one is on the Optical Ridge and one is on the northeast tower.

The solar arrays and wind turbines provide an invaluable teaching tool. Most students today are interested in conserving resources and protecting the environment. PARI's alternative energy systems have sufficient metering and adjustments to provide rich solar and wind energy labs for students' educational experiences, with system performance metrics available through a web interface.

Like so many others at PARI, these alternative energy systems take ideas out of the classroom and provide a real hands-on learning experience. PARI can demonstrate to teachers and students how such systems can be designed and built, and let them observe in real-time the differential outputs of system placement, angles and other factors. The alternative energy initiatives at PARI have the potential to add value in every aspect of STEM education: science, technology, engineering and mathematics.