



TOP 5 Ways to Demonstrate Your Commitment to Sustainability

There is no doubt that today's high school and college students are a major driving force in the green transition. In fact, according to the 2022 *Princeton Review* "Hopes & Worries Report," 74% of college applicants said a college's environmental commitment would affect their decision – an encouraging statistic and an optimistic sign towards a sustainable future.

But with high energy consumption, limited budgets, and aging infrastructure, how do schools and universities answer the call and take meaningful action that demonstrates credible climate commitments?

The following are tangible solutions that campuses can consider to reduce carbon emissions, energy costs and usage. Better yet, these ideas also positively impact the comfort, learning experience, and climate concerns of students, faculty, and the community.



Smart LED Lighting

You've probably heard that light-emitting diode (LED) lights reduce energy consumption by up to 70%. What's more is that, when paired with smart controls, LED lighting can deliver numerous additional benefits that may not be as obvious. LEDs are an easy way to reduce your energy footprint.

Inside buildings, interior lighting controls can include occupancy or vacancy sensors; high-end trim; demand-controlled dimming; day lighting; and advanced window shades. This functionality can improve the learning and research environments for faculty and staff while visibly demonstrating a commitment to a greener approach to lighting. Smart LED exterior lighting systems can monitor for outages and streamline lighting management, contributing to improved visibility and safer campuses.



Baltimore City Public Schools (MD) recently completed an energy conservation project that consisted of replacing existing interior and exterior lighting with LED lighting at 15 school buildings. In addition to improving energy efficiency and lighting quality, some of the lighting also included occupancy sensors so that the lights will turn off automatically when no one is present. The project is estimated to earn City Schools a \$500,000 rebate from Baltimore Gas & Electric, the local utility, and save over \$400,000 annually in lower electricity costs.

**BUDGET
NEUTRAL**



Solar Power

As a highly recognizable symbol of renewable energy, solar power can immediately deliver energy cost savings and a visible commitment to sustainability and the environment. Solar energy (also called photovoltaic or "PV") can be applied in many forms at schools and campuses. Applications range from rooftop-mounted or ground-mounted systems, solar carports, integrated solar thermal energy systems, and solar-powered benches.

In addition to delivering clean, renewable energy and the potential for cost savings, these solar solutions can provide shade during warm or extreme weather, and conveniences such as covered parking and community gathering spots with a perk of phone-charging capabilities.

Upon declaring a climate emergency, the **University of West London** in the UK pledged to reach net zero carbon emissions by 2030. Launching a decarbonization plan, the project included the installation of 580 solar panels to help power ground source heat pumps and reduce nitrogen oxide pollution.

In addition to enhancing comfort for the students and faculty, the project also helped to improve the air quality of the campus' surrounding area and was recognized as a top decarbonization project in the higher education sector by the UK's Energy Managers Association (EMA).





Energy Storage and Microgrids

While solar power can significantly reduce carbon emissions, it is only one piece of the puzzle when targeting a zero carbon future. A diverse set of clean energy solutions helps to bolster the reliability of renewable energy so that carbon-neutral energy is readily available throughout the day.

Energy storage systems (such as lithium-ion batteries) enable a facility to store excess solar energy to be used at a later time and, when paired with a microgrid, can provide backup power in the event of an outage. These solutions can help to keep the lights on, the heat or A/C running, and electronics charged. Some districts even leverage these technologies to turn their facilities into local emergency shelters for the community, when needed.

In addition, energy storage systems and microgrids can help better equip a school or university to share the benefits of these distributed resources with their local community. The local energy distribution company or utility can be interconnected to enable the use of microgrid-connected renewable energy system as an energy supply resource for the greater community.



The London District Catholic School Board in Ontario, Canada transformed **John Paul II Catholic Secondary School** into Canada's first school to be retrofitted carbon neutral. Using solar energy generation within a microgrid architecture controlled with assistance from energy storage, the project allows JP II to operate in "island mode" which means it can operate independently from the electricity grid in the event of a grid supply failure. Reducing annual greenhouse gas emissions from 277 tonnes to near zero, the historic project also enhanced energy resiliency and overall building comfort for students and faculty.

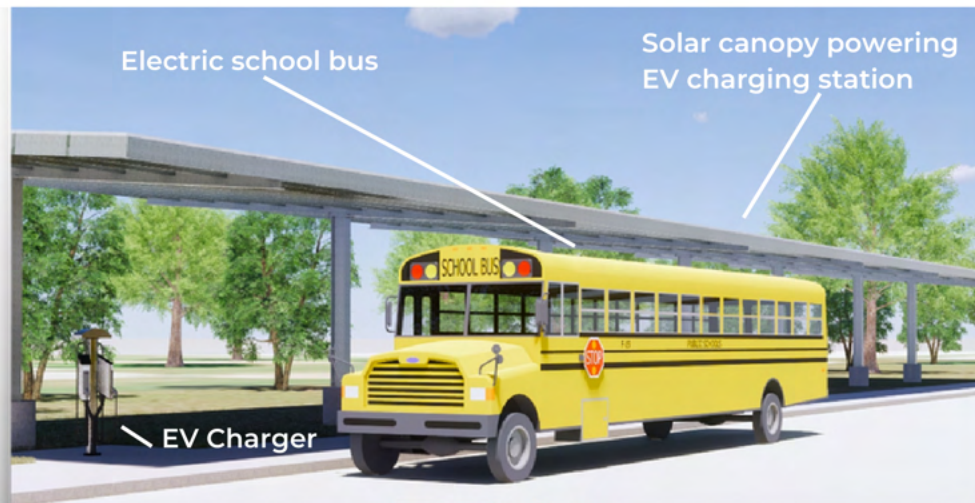
Energy as a
Service
Agreement



Electrical Vehicle (EV) Infrastructure

With transportation as the #1 contributor to greenhouse gas emissions, the use of electric vehicles is growing and thereby increasing the demand for EV charging infrastructure. In addition, fleet electrification – including school bus fleets – is experiencing significant growth. Electrified buses present an opportunity for K-12 districts and campuses alike, and EV charging infrastructure continues to gain traction at colleges and universities for (existing and prospective!) faculty, students and staff.

Benefits of electric vehicles include improved air quality, reduced emissions, advanced sustainability goals, and reduced operations and maintenance costs. Infrastructure upgrades for fleet electrification can be accelerated with tools such as a "transportation as a service" model to address common challenges like upfront costs and technology complexities. Comprehensive energy partners can deliver a turnkey electrified fleet solution to support ongoing needs and remove the traditional burden of infrastructure management.



Clean Energy Curriculum

We have the opportunity to empower the next generation of clean energy leaders. Climate change is an every day conversation and energy surrounds us all the time – renewable energy education is an increasingly pertinent science, societal, and current events topic for classrooms from K-12 to college.

Schools are incorporating renewable energy on-site in educational settings and are integrating lessons in school curriculum to support STEAM (science, technology, engineering, arts, mathematics) education. The wide-open minds of the student population benefits from the combination of on-site learning – whether it's how to conserve energy with measures like LEDs; how renewable energy resources are built, work, and operated; or how batteries can deliver the reliable energy that we've come to know and trust in our communities. You can electrify clean energy curriculum in so many different ways!



Looking to create an immersive indoor and outdoor environment for students to experience and explore STEAM activities,

Montecito Union School District in California sought to develop an immersive Nature Lab "Collaboratory" for their K-6 student population.

Comprised of over 450 photovoltaic panels, the solar canopy generates more than 300,000 kWh per year, creating an environmentally sustainable learning space while showcasing the many benefits of renewable energy to the next generation.

Brophy College Preparatory School

– a private Jesuit school located in Phoenix, AZ – embarked on a comprehensive solar project with rooftop and carport solar systems throughout its campus.

The project scope included an educational component for students with three classes on the development, implementation, and post-construction aftercare process for the solar arrays. This advanced the goals of Brophy's Student Climate Coalition to achieve broader sustainability benefits, increase economic returns, and enhance social equity for the school as a whole.



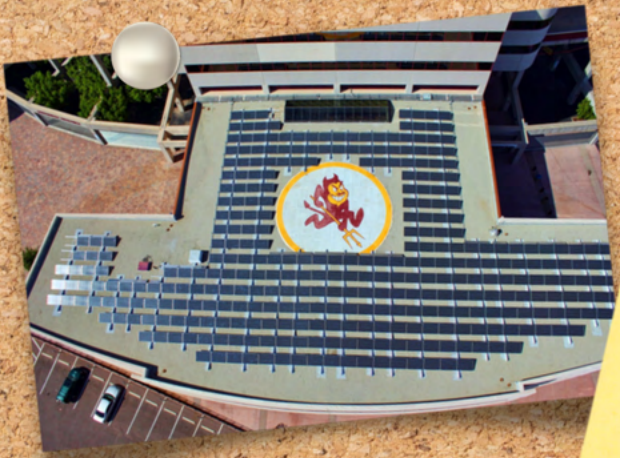
Taken separately or as part of a comprehensive energy system, these solutions will go a long way to not only reduce energy use and advance sustainability goals, but demonstrate authentic action and an alignment with the goals of the next generation.

So how do you get these projects off the ground, financed, and budget-neutral?

Innovative Financing Options

→ **ENERGY AS A SERVICE (EaaS)** - EaaS delivers energy-related infrastructure improvements or technology directly to an end customer, under a long-term service agreement. An EaaS structure can help schools or universities address deferred maintenance challenges with no up-front capital required, while also advancing its sustainability and academic goals.

→ **ENERGY SAVINGS PERFORMANCE CONTRACTING (ESPC)** - An ESPC enables customers to leverage energy savings to renew facilities and building systems. ESPCs provide a simple solution to a big challenge: completing necessary infrastructure upgrades when budgets are tight or non-existent. This budget-neutral mechanism is financed by using future energy savings - the savings a school or university is achieving through an ESPC by lowering its monthly utility bills - to finance energy infrastructure and facility improvements.



Interested in any of these solutions for your school? Contact Us:
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