

HIGHLIGHTS

The Revolving Sustainability Fund has launched! This fund has been set aside for projects that (1) address one of the PSC Sustainability Strategy's priority areas, and (2) have a positive financial return on investment. Anyone in the college (students, staff, faculty) can propose a project! If you have an idea, send an email to sustainability@prairiestate.edu. Check out the [brochure here](#), and the [application form here!](#)

Thanks to everyone who contributed to a **year-long bottle-cap and lid collection** campaign on campus. The caps were taken to a recycling facility in July, where they were melted down to create a park bench that is now located at the entrance of PSC's Matteson Area Center. The bench is a reminder of the lasting value of materials we generally deem "waste."

How sustainable is PSC's commute? The results from PSC's first commuter survey were sent to the college in August, highlighting some of the issues associated with some of the most common ways our community gets to campus. (The [report is here](#) if you missed it!)



What can I do to help?

- **Identify resource-saving projects.** The Sustainability Office now has a [Revolving Sustainability Fund](#) which can be used to fund projects that save both money, and other resources (energy, water, emissions, etc.). If you have ideas for projects that could meet these criteria, get in touch at sustainability@prairiestate.edu!

UPCOMING



The Sustainability Club is collecting used clothes for a fashion show on Tuesday, Oct. 29. Drop unwanted used clothing off at Joel's office (3216) to support their event that will highlight the environmental issues associated with the fashion industry.



PSC is hosting its first Upcycle-palooza event in the atrium on Wednesday, Nov. 13, from 10 a.m. to 1 p.m. The event will include craft activities as well as a competition for the best upcycled creation. All creations will be made from would-be "waste" from various sources, including the Support Services, Enrollment Services, and Marketing departments, as well as the wider PSC community.



The [Chicago Southland Green Committee](#) is hosting its annual Pumpkin Smash event on Saturday, Nov. 2 at the Coyote Run Golf Course from 10 a.m. to 1 p.m. This family-friendly event offers fun ways to dispose of pumpkins after Halloween. After being smashed, the pumpkins are composted and used as fertilizer on nearby farms!



The Prairie State Regional Sustainability Network and SMHEC are holding a workshop to help municipalities identify sustainability-related assets in the context of the [Greenest Region Compact](#) at the Conference Center on Wednesday, Nov. 6, from 9 a.m. to noon. [More information and registration here.](#)

IN THE NEWS

Crops in the Midwest were drowned by intense rain events this spring. If climate models are correct, this trend is likely to continue. [This article](#) outlines what is happening and the implications for the future of the Midwestern farmer. Also agriculture related is [this article](#) which outlines the sweeping changes that our food systems need to go through to feed the 10 billion people who will call Earth home in 2050.

In many developing parts of the world, **basic access to clean water and electricity** can be hard to come by. A [new combination of technologies](#) is offering the potential to provide both clean energy and clean water simultaneously. The device uses the waste heat from solar photovoltaic panels to produce clean water (meeting the standards of the World Health Organization) from seawater.

[Taiwan-based Gogoro](#) offers a **solution for electric urban transportation** without long waits for recharging batteries. Their network of battery swap stations allows scooter-riding subscribers to drop off their depleted batteries and swap in fully-charged ones to continue on their way in seconds (rather than the hours it would normally take to recharge). Several big-name scooter manufacturers like [Yamaha](#), [Aeon Motors](#), and [Bosch](#) have announced they will be making scooters compatible with the Gogoro batteries.



WORDS: Upcycle

Everyone has heard of recycling, but what about “upcycling?” This relatively new term has increased in popularity recently, and is a response to the fact that recycling (as it is commonly done) is a much less than ideal way of handling waste. Traditional recycling requires almost a full remanufacturing of a given material or product, which involves significant energy (and other resource) inputs and material transportation. Because of this, recycling bin waste has much less value than the product that was sold to you.

Upcycling involves adding value to what is typically seen as low- or no-value waste. This could mean using a paper towel tube (no value) [as a biodegradable vehicle for planting seedlings](#) (more value); [making an artistic gazebo](#) (lots of value) out of used soup cans (little value); [making a tote bag](#) (some value) out of an old or unused T-shirt (no value); or turning an old sweater (little value) into a [beanie](#) (value), [cushions](#) (value!), [mittens](#) (value!!), etc.

If you love upcycling or want to learn more about it, come to PSC’s Upcycle-palooza event on Wednesday, Nov. 13, from 10 a.m. to 1 p.m. in the atrium!

Making tote bags and reusable wrapping “paper” out of T-shirts

Crocheting with plastic grocery bags

UPCYCLE PALOOZA
Wednesday, Nov. 13
10 a.m. to 1 p.m.
Atrium

Plant-able seeded gift tags/greeting cards made from old course schedules

Other activities TBA

Upcycle Activities
Come help us give “waste” a new life!

Student groups are encouraged to enter an upcycling competition. The best upcycled creation from a club/class will win pizza at their next club/class meeting as well as their club/class name on the Upcycle Trophy!

For more information, contact Joel Nightingale at jnightingale@prairiestate.edu.

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SPOTLIGHT

You may have noticed the construction going on as the main building is getting the final touches put on its new roof. This much needed project was important to keep our classrooms and offices dry, but the roof also serves a critical role in maintaining the building's indoor temperature year-round.

In the summer, the roof acts as a barrier between the hot sun on long days and the air-conditioned inside. The new roof has a type and thickness of insulation that is about twice as resistant to heat transfer between the building and the outside as the old roof. In addition to this better insulation, the surface of the roof is now much lighter in color (from dark grey to white). This helps the roof to reflect sunlight away from the building, and ultimately requires less energy use by our cooling systems to maintain a comfortable indoor temperature.

In the winter, when outdoor temperatures drop, the main building's heating system will have an easier time keeping us warm since it will "leak" less heat through the more-effectively blanketed roof. This paired with the new roof's hot-weather benefits will mean less energy use, fewer emissions and a lower operational cost for the college.



Got Ideas?

If you have ideas for helping our campus run more efficiently, produce less waste, offer sustainability-related courses or programs or generally be more sustainable, contact PSC's Sustainability Coordinator Joel Nightingale at jnightingale@prairiestate.edu or extension 3727.



FORWARD THINKING: What's all this about energy storage?

If you've been paying attention to the increasing deployment of renewable energy sources in the U.S. and around the world (like the solar scheduled to be installed on PSC's roofs this fall/winter, for example), you may have heard about the need for energy storage on the grid.

One notable and highly publicized example is [Tesla's 100 MW \(129 MWh\) battery bank](#) installed in South Australia in 2017. At the time, it was the largest lithium-ion battery in the world and had a storage capacity equivalent to about 12.5 million iPhone X batteries. As it turns out, this wasn't just for bragging rights. It also was a highly lucrative project. Early life financial documents showed that the battery was on track to recover "[a third of its construction cost in the first year of operation](#)" while drastically [improving grid reliability](#) and enabling the effective use of renewables.

So, energy storage can be financially advantageous (especially in a place like South Australia), but how does it work and what purpose does it really serve?

Large-scale grid-connected storage has been, up to now, something we haven't had to think much about in the United States. And, the main reason for that is that our traditional power sources are, effectively, their own storage devices. Fossil fuels, like natural gas and coal, are stored chemical energy which is released by burning them and sent to the grid as needed. In the energy sector, a power source that can be controlled in this way is called a "dispatchable" source. Our grid was built to deliver power from dispatchable energy sources just in time to meet the demands of power users. So, when you turn on your hairdryer, there is a power plant somewhere that just ramped up its power production by 1000 watts just for you!

Resources like wind and solar are non-dispatchable energy sources meaning that, while we can predict their availability to a certain degree, we can't control when the sun shines or when the wind blows. And, because our grid was set up to deliver power just in time, a solar array producing all of its power during the day doesn't help us much for our overnight Netflix binges.

So, in order to best utilize these renewable energy sources, what we need is an efficient way to capture the energy when it is produced and release it back to the grid at times when it is needed. We need storage. The giant Tesla battery in South Australia is just one example of an energy storage tool, namely lithium ion batteries. But, for current cost and life-span reasons, lithium ion batteries are not [often the most economical storage solution](#), especially for longer-term storage (like what would be needed to shift a solar energy surplus in the summer to the winter). Other storage options that can be more economical in certain situations include methods like [pumped water](#), [thermal storage](#), and compressed air. Grid operators are even looking towards plug-in [vehicles as potential grid storage assets](#)!

The specifics of a given region's energy needs and assets will determine what type of storage system makes the most sense, but if we are to move to a fully renewable electrical system the need for a storage solution is clear.