

CRC's GREEN SCENE

A bimonthly newsletter of the Sustainability Committee at Cosumnes River College

Photo by Jim West

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CRC Parking Garage's Solar Power Pays Off



Solar panels on the roof of the parking garage provide power as well as shade for parked cars.

Debra Sharkey reports...

Want to know how many solar photovoltaic (PV) panels are mounted on top of our new parking garage? Would you believe there are actually 1,056 of them? Each panel measures 3' x 6' and is rated at 275 watts. The entire rooftop system is capable of providing 290.4 Kw of direct current (DC) power—more than seven times the generating capacity of the system atop the Winn Center. From the garage's roof, captured solar energy

travels (as DC) down to an equipment room on the first floor, where an inverter converts the energy to alternating current (AC) that is then fed into the same "bus" as energy coming from SMUD.

The garage's estimated annual power usage—from lights, elevators, ticket machines, booster pump in case of fire, electric car charging stations, etc.—is 433,000 kilowatt hours (KwH). A conservative estimate of

(see *Excess Power*, Page 2)



Excess Power Flows Back into the Grid

(From Page 1)



The parking garage's solar panels can be seen in this photo taken from the roof of the Winn Center.

the production capacity of the PV system is about 390,000 kWh annually, approximately 90% of the building's total energy demand—or enough to power about 34.5 homes annually.

Of course, solar power generation occurs only during daylight hours. Thus, on days when the garage consumes less power than the PV system produces, the excess power flows back into the SMUD grid (a process known as “over-

producing”) and CRC accrues credits on SMUD's meter (though SMUD reportedly pays only about 5 cents per kWh for solar overproduction while CRC pays SMUD about 11 cents per kWh for grid power).

Because our PV system has no built-in storage capacity, at night the garage is powered solely by power from SMUD's grid. To conserve energy both day and night, high efficiency lighting

fixtures (manufactured by First Source Lighting in Auburn) illuminate the structure.

Next time you're in the garage, look up to the ceiling to see these triangular-shaped lights, designed to throw light in all directions. Many fixtures have occupancy sensors that turn the light on when a person or vehicle triggers the sensor. For safety reasons, some fixtures remain on 24 hours a day while others keep only one of their three lamps on all the time, the remaining two coming on as needed. ♦



When all three lamps are on in one of the garage's high-efficiency lights, light shines in all directions.



Rick Stewart stands next to the solar panels atop the Winn Center.

“The Sol of CRC”

Debra Sharkey reports...

Excited to learn more about CRC's new ability to harness solar power, a former physical geography student, Rick Stewart, made a great ten-minute video, “The Sol of CRC,” for his term project last semester. In it, he explains how the garage's PV system works, as well as how the Winn Center uses sunlight for natural lighting and power generation. ♦

Watch Rick's video: <http://youtu.be/47HkynhSoTg>

Faculty Member Cuts Electricity Cost With Solar Panels

Gregory Beyrer reports...

Sacramento summers make me dread my family's electricity bill, and last year my wife and I decided to do something about it by purchasing solar panels for our home. Since we are members of SMUD's Greenergy program, in theory our household electricity already comes from sustainable sources. But by adding solar panels, we can give back to the grid when our house generates more power than we use, while cutting our electricity bill at the same time.

The best part of the system is the online monitoring service, where



Gregory Beyrer hopes the new solar panels on the roof of his home will save money as well as give back to the grid.

we can see the amount of energy our panels are generating by the hour as well as how much the system offsets. We went online on 12 July 2013, and as of 24 February 2014 had generated a total of 2.35 megawatt-hours. According to the system, that means our panels have generated enough energy to

light the Eiffel Tower for 12 hours!

We won't find out our actual savings until we have had the system for a year, as SMUD withholds the usage charge from our bills and calculates the net amount on an annual basis. In the meantime, we have

been enjoying sub-\$25 monthly bills (infrastructure, tax, etc.) and in July 2014 will find out whether we have saved enough to pay for a trip to Paris, France or if we'll only be able to make it to Paris, Texas. We'll report on our results in a future Green Scene, so stay tuned. ♦

Solar Club Goes Afloat

Ryan Connally reports...

On May 17, the CRC Solar Club is competing in the 2014 SMUD Solar Regatta at Rancho Seco. Currently nine colleges, including CRC, ARC, Sierra, and Delta, are participating, fielding eleven teams. The CRC Solar Club has designed a boat to be captained by a student in three races: a slalom, a drag, and an endurance race.

Please encourage your students to join the fun! The Solar Club welcomes newcomers to attend meetings to help in the fabrication process. Participants will learn about the basics of electricity as well as the principles of photovoltaics and sustainable energy. They will also learn how to work with various

materials involved in the fabrication, including aluminum, nylon, wood, and steel.

The competition will include the option to camp out at the site the night before the race and will be an opportunity for our students to interact with many other likeminded students from around Central California.

In the fall, the Solar Club will resume final design and fabrication of the Solar Thermal Trainer—a project funded by a SMUD grant—to demonstrate the latest technologies in solar water heating and cost-effective ways to use the hot water to heat your home and your showers. ♦

For information about this year's Solar Regatta, check out <https://www.smud.org/en/about-smud/environment/renewable-energy/solar-regatta.htm>



Future Sustainability Facilitator

Editor's Note: In this series, we spotlight CRC students with an interest in sustainability issues.



Ambling through his first years in community college without a clear educational path, César Aguirre was drawn to his current major of Environmental Studies

and Sustainability shortly after joining the Students for a Sustainable Future (SSF) Club, near the time of its inception. After learning about environmental issues, such as the impacts of fossil fuels and plastics, and benefitting from the encouragement of then-club president Leticia Padilla and club advisor Professor Debra Sharkey, César is now committed to an educational goal with a clear purpose: he hopes to play the role of facilitator in our transition towards a more sustainable relationship with the environment.

A Sacramento native of 26 years, César enjoys taking advantage of living in the state capital by involving himself in political activism. He credits his

experiences within the Occupy movement with galvanizing his drive for social and environmental justice. An avid cyclist, César commutes primarily by bicycle to curb his carbon footprint. This semester César plans to lead the current SSF club in their activities, attend his first “This Way to Sustainability” conference at CSU Chico, and take part in CRC’s Earth Week celebration.

César is currently working on a transfer to CSU Humboldt to study either Environmental Sciences or Environmental Management and Protection. “CSU Chico and CSU Sacramento are also possibilities,” he says, “though they’ll have a hard time competing with the luscious landscape of the Northern California temperate coniferous forests.” ♦

“This Way to Sustainability” Conference at CSU Chico

On Friday, March 7, eight students accompanied geography professor Debra Sharkey to CSU Chico to attend the 9th Annual “This Way to Sustainability” Conference, the largest student-run sustainability conference in the nation. The group attended presentations on many topics including water conservation, carbon pollution pricing, GMO labeling, green careers, fossil fuel divestment, organic plant breeding techniques, sustainable food practices at events, vermicomposting, and biomimicry. In addition, CRC architecture professor John Ellis, Lionakis, and DPR Construction jointly presented “Buildings That Teach”—the story of our own sustainably designed Winn Center. ♦



Students Ashley Scurti, Jaime Gonzalez, Grace Saducos, Vivian Tran, Cynthia Leng, Meghan Scurti, and César Aguirre enjoy a continental breakfast at the conference.

EARTH DAY SUSTAINABLE FOOD FESTIVAL

IN COLLABORATION WITH **ONEBOOK**, **CRC FOUNDATION**, AND THE **SUSTAINABILITY COMMITTEE**

THURSDAY, APRIL 24
10:00 AM - 3:00 PM | WINN CENTER

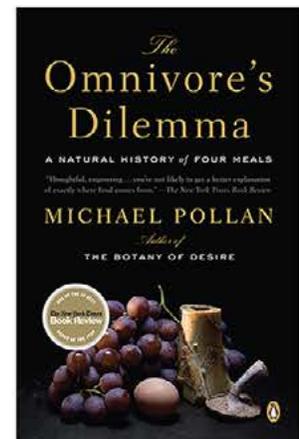
COSUMNES RIVER COLLEGE INVITES YOU TO A SPECIAL ONE DAY EVENT FEATURING SUSTAINABILITY, FOOD AND GOOD HEALTH IN CELEBRATION OF EARTH DAY.



CRC FOUNDATION'S DISTINGUISHED SPEAKER SERIES: MICHAEL POLLAN

10:30 AM - 12:00 PM | RECITAL HALL

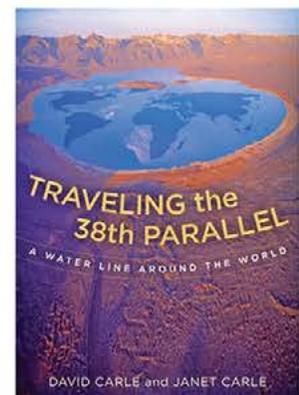
Michael Pollan is the author of several books including *Cooked*, *The Botany of Desire*, *The Omnivore's Dilemma*, and *In Defense of Food*. A longtime contributing writer to *The New York Times Magazine*, Pollan is also the Knight Professor of Journalism at UC Berkeley. His writing on food and agriculture has won numerous awards, including the Reuters/World Conservation Union Global Award in Environmental Journalism, the James Beard Award, and the Genesis Award from the American Humane Association.



DAVID & JANET CARLE

1:30 PM - 3:00 PM | RECITAL HALL

Between extremes of climate farther north and south, the 38th North parallel line marks a temperate, middle latitude where human societies have thrived since the beginning of civilization. It divides North and South Korea, passes through Athens and San Francisco, and bisects Mono Lake in the eastern Sierra Nevada, where authors David and Janet Carle make their home. Former park rangers, the authors set out on an around-the-world journey in search of water-related environmental and cultural intersections along the 38th parallel. This book is a chronicle of their adventures as they meet people confronting challenges in water supply, pollution, wetlands loss, and habitat protection. At the heart of the narrative are the riveting stories of the passionate individuals—scientists, educators, and local activists—who are struggling to preserve some of the world's most amazing, yet threatened, landscapes.



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SEAFOOD WATCH: There may not always be other fish in the sea.

Christina Ocrant reports...

These days, information is at our fingertips as never before. Despite this, using the internet to help us eat sustainably can still be very difficult when raw data is often indecipherable and out of context to the typical consumer, our oceans are vast, and our food journeys to our tables from across the globe. How, then, do we make sustainable choices when shopping for fish at the supermarket?



Download the
"Seafood Watch" app
for iOS or Android

Monterey Bay Aquarium launched the Seafood Watch program in 1999 to research and evaluate fishing practices, fisheries, and aquaculture operations worldwide. Their handy Seafood Watch app now lets the experts take the guesswork out of shopping for fish.

Their recommendations take into consideration not just sustainability but also human health.

The app has the most up-to-date guides, which you can use to browse the "Super Green List," "Best Choice," "Good Alternative," and "Avoid" categories. Every fish on the **Super Green List** is a win for our health and our oceans:

- Contains very low levels of mercury, below 216 parts per billion
- Provides at least 250 mg of omega-3
- Has minimal environmental impact

The next time you are trying to decide which fish to buy, whip out your phone, type in the name of a fish, and find out if it's caught or raised responsibly. Then, vote with your wallet. ♦

Don't have a smart phone?
Visit www.seafoodwatch.org and view the seafood guides posted there.



Green Scene Award

Kudos to CRC Director of Administrative Services Augustine Chavez and web developer Christina Ocrant for bringing our LUCID Building Dashboard site to life so that CRC students, staff, and faculty can track energy usage throughout campus.

You can view our Lucid Building Dashboard at

<http://www.buildingdashboard.net/crc>

Stay tuned for an in-depth article about the new Lucid Building Dashboard in our next issue.