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November
2015
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the GREEN INSIDER

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HARVEY MUDD'S SUSTAINABILITY EFFORTS

JERMAINE BAYLARK

On September 25, 2015 Harvey Mudd College officially entered into the sustainability realm with the launch of the Hixon Center for Sustainable Environmental Design. The inaugural Hixon Professor of Sustainable Design Tanja Srebotnjak was hired in 2014 to found the Hixon center, which is tasked with expanding student and faculty experiences and promoting environmental science and design at the College and within the Claremont Consortium. The center works with its community partners to invigorate innovative thinking, encourage local action and global engagement, and to instill a high level of ethical and professional awareness in Harvey Mudd's graduates concerning some of today's most critical environmental challenges.

"Hixon Center programs build on the many sustainability initiatives and goals achieved since Harvey Mudd's founding and draw on the collaborative spirit of its faculty, staff and students."

-Tanja Srebotnjak, the inaugural Hixon Professor of Sustainable Environmental Design.

Srebotnjak also announced that Harvey's Mudd Center for Environmental Studies (CES) will merge with and become part of the Hixon Center with the hopes of maximizing student education resources and enhancing research and service around important environmental issues. Hopefully more sustainability efforts such as this will soon become more prevalent in campuses across the U.S.

BIG TECH. GOES GREEN

JERMAINE BAYLARK

Last month Apple announced two new programs aimed at reducing the carbon footprint of manufacturing partners (primarily Foxconn) in China. The programs will avoid over 20 million metric tons of greenhouse gas pollution in the country between now and 2020, equivalent to taking nearly 4 million passenger vehicles off the road for one year. Apple plans on building over 200 megawatts of solar projects in the northern, eastern, and southern grid regions of China, which will produce the equivalent of the energy used by more than 265,000 Chinese homes yearly.

Second, Apple is launching a new initiative to drive its manufacturing partners to become more energy efficient and to use clean energy for their manufacturing operations. Apple will partner with suppliers in China to install more than 2 gigawatts of new clean energy in the coming years.

Apple also will share best practices in procuring clean energy and building high-quality renewable energy projects, and provide hands-on assistance to some suppliers in areas like energy efficiency audits, regulatory guidance and building strong partnerships to bring new clean energy projects to China.

PHOO KHINE

Energy is important in our daily lives. As humans we are dependent on energy as much as plants are dependent on sunlight. Without a form of energy, the batteries from our phones and laptops will not be able to function, electricity which we rely on will not be there, our cars will not be able to start and even our bodies wont be able to function without taking in food, which is a form of chemical energy. At the end of the day all we are all energy consumers and without energy we won't be able to survive.

Energy comes in different forms such as light, heat, chemical, electrical, solar, nuclear and so on. All these types of energy affect us in one way or another. The sun stands as a great source of energy providing light and heat. In fact, the sun was the only source of energy for people in ancient times. Later in 1600s, people learned how to utilize machines and invented steam power plants which harvested energy from fossil fuels such as coal. These power plants alongside the discovery of commercial electricity by Nikola Tesla in the 1800s sparked the industrial revolution. The United States drastically turned into a nation with a great source of machine power, wealth, and technology. Ever since then, energy has helped make our lives easier.

Power plants however have a down side. Although it utilizes chemical energy from the coal and turns it into heat power to run the generator and produce electricity, the coal burned for the entire process releases a great amount of carbon dioxide, which harms our environment when accumulated over many years. We do not want our next generation to face serious environmental problems so that is where sustainability comes in. Sustainability, according to ecology means, the capacity to endure. In general terms, sustainability is the endurance of systems and processes.

As a mechanical engineering student at Cal Poly Pomona, energy already plays a great role in my life. I believe the knowledge of energy and sustainability should be of interest to everyone, not only to engineers. A later newsletter will cover the Sterling Engine which is known as the "free energy" generator.

HUMANS, ENERGY, AND SUSTAINABILITY: A MECHANICAL OUTLOOK

THE JOURNEY TO SUSTAINABLE HOUSING

PHOO KHINE

On October 18th the PowerSave team at Cal Poly Pomona organized a trip to go to the Solar Decathlon Competition. The Solar Decathlon is a student design competition held by the U.S Department of Energy. 17 collegiate teams participated in a competition in which they had to spend close to two years designing and building a solar-powered house. The winning team has to produce a house that is affordable and inhabitable while maintaining a comfortable environment. It also has to supply energy for cooking, cleaning, and entertainment. The most important requirement though is that it has to produce as much or more energy than it consumes.

The solar-powered house designed by the 1st place team The Stevens Institute of Technology aims to reduce energy use as well as adapt to the realities of more extreme climate conditions. They built a "SURE HOUSE" that can withstand storms from coastal areas. The two bedroom house for a middle-class family provides more energy than it consumes for a year. They also integrated fiber-composite shutters to lock into the house windows when storms came through so that water cannot get into the house. Last but not least, they took into account the thick insulation for the house so that when outdoor temperature shifts energy use will be reduced at the same time.

10 TIPS TO SAVE ENERGY & MONEY THIS THANKSGIVING

JOMEL BAUTISTA

Now that Halloween is done, it's time to get ready for some mashed potatoes and juicy turkey! We turned to the Edison Electric Institute to get some energy and money saving tips for this Thanksgiving season.

1. Having a large party over for your Thanksgiving feast? You may be able to take some work off of your thermostat! If a large group of people is expected for dinner, lower the thermostat a degree or two before the guests arrive. Otherwise, since people generate heat, the space may become wastefully overheated.
2. Check your refrigerator and freezer doors to make sure they seal tightly so as to keep cold air in and warm air out. Take a piece of paper and slip it in between the door, if it falls out easily then you might need to make adjustments.
3. Uncovered, hot food and liquids give off vapors that make the fridge work harder. . Use a lid or plastic wrap to cover the food and place in the refrigerator after cooling.
4. Use a "lids-on" approach to cooking. Tightly fitted lids on pots and pans help keep heat in, enabling you to lower the temperature settings and shorten the cooking times.
5. When boiling liquids, start by using the highest temperature settings to reach the boiling point. Then lower the heat control setting and allow the food to simmer until fully cooked.
6. Use the microwave instead of your regular oven whenever possible. Microwave ovens draw less than half the power of your regular oven, and they cook for a much shorter period of time.
7. When preheating your regular oven, time the preheat period to five to eight minutes. There is no need to preheat for broiling or roasting.
8. When using an electric oven, cook as much of your meal as possible in it at one time. Foods with different cooking temperatures can often be cooked simultaneously at one temperature – variations of 25 degrees Fahrenheit in either direction still produce good results and save energy.
9. If you have a second refrigerator, consider placing it in the basement or other insulated area of your home. Having an extra fridge can be bad for leftover food and the energy bill.
10. Wipe up minor spills and splatters with a damp cloth. When you do use the oven's self-cleaning feature, start the cycle right after cooking, while the oven is still hot, or wait until late evening hours when use of electricity is lowest.

See more at: http://www.eei.org/resourcesandmedia/energynews/Pages/10%20Energy%20Saving%20Tips%20To%20Gobble%20Up%20This%20Thanksgiving.aspx#sthash.eb1TL5KD.dpuf

CONTACT US!

Jomel Bautista	jomelgbautista@gmail.com
Jermaine Baylark	jermainebaylark@gmail.com
Phoo Khine	phoo.93@gmail.com

POWERSAVE CAMPUS

GENERAL INQUIRIES:

greencampus.cpp@gmail.com

powersavecampuscpp.weebly.com