Week in Energy Newsletter

(pdf version attached)

Welcome to the Fifteenth Edition of the 'Week in Energy' Newsletter (02/09 – 02/15)!

Sign-up for the Africa Tech & Energy Panels on February 20th, 10am-3pm. You won't want to miss this event!

Africa Energy Panel (10:30am - 12:00pm): http://cglink.me/r264391

Africa Tech Panel (1:00pm to 2:30pm): http://cglink.me/r265986

Please do not forget to send your energy news and ESTP updates plus any comments to the Editor at saakshig@andrew.cmu.edu

In this Edition…

KEYSTONE XL PIPELINE

Congress passes Keystone XL bill

The Keystone XL Pipeline just got one step closer to reality as Congress passed a bill approving the controversial project this afternoon. The bill passed with a vote of 270-152, and it will not head to the desk of President Obama, who has clearly stated that he will use presidential power to veto it. Support in both the Senate and the House is not great enough to override Obama's anticipated veto. Americans are deeply divided over the project, with many opposed due to concerns over climate change and potential oil spills, and supporters who say the $8 billion in spending on the project will help create jobs and bolster American energy security.

What's next for the bill: http://columbiadailyherald.com/news/state/house-vote-keystone-sets-obama-veto

CMU NEWS

Should we be investing in a wind farm or solar power plant?

CMU's Inez Azevedo in this video summarizes a paper developed with fellow researchers Kyle Siler-Evans, M. Granger Morgan and Jay Apt, that explores regional and technological aspects of the question.

https://www.youtube.com/watch?v=Ah5tM4kw9To&feature=youtu.be

Shale gas severance tax in PA

CMU Ph.D. candidates Parth Vaishnav and Nathaniel Horner with Professor of Economics and Public Policy, Lee G. Branstetter explore how the Pennsylvania economy will react to a shale gas severance tax that imparts no damage to the natural gas industry.

Article in the Post-Gazette: http://www.post-gazette.com/opinion/Op-Ed/2015/01/18/Pennsylvania-needs-and-can-afford-a-shale-gas-severance-tax-according-to-Carnegie-Mellon-University-analysts/stories/201501180057

CLIMATE CHANGE

Aussie scientists issue new climate change warning

Australia's top scientists have published a booklet about climate change to Australians about the dire consequences of global warming if no immediate action is taken. The new publication is meant to create awareness and eliminate confusion. The Australian Academy of Science released "Science of Climate Change: Questions and Answers" to bridge the gap between the general perception of climate change and reality. What is notable about the new publication is the extent to which it has moved to respond to the real world needs of ordinary people, organizations and communities trying to understand what climate change means to them.

View web version here: https://www.science.org.au/climatechange

NASA predicts 'megadroughts' due to climate change

A new NASA study found that parts of the U.S. are at risk for "megadroughts" during the second half of this century because of climate change. These droughts would hit the American southwest and Great Plains, ad would be the worst the country has seen in the past 1000 years. Over the past four years, droughts in California and the southwest have cost the area billions of dollars I agricultural losses, fire damage ad lost jobs. NASA climate scientist Ben Cook says these naturally occurring droughts typically last 10 years at most, which will be short compared to what this new study predicts.

Read more about the study results here:
http://www.nasa.gov/press/2015/february/nasa-study-finds-carbon-emissions-could-dramatically-increase-risk-of-us/#.VOIniPnF-Sq

Watch the video here: https://www.youtube.com/watch?v=ToY4eeWsdLc

More infectious diseases emerging because of climate change

The appearance of infectious diseases in new places and new hosts, such as West Nile virus and Ebola, is a predictable result of climate change. In online published article, Daniel Brooks warns that humans can expect more such illnesses to emerge in the future as climate change shifts habitats and brings wildlife, crops, livestock and humans into contact with pathogens to which they are susceptible, but to which they have never been exposed before. He believes that there are going to be a lot of localized outbreaks putting pressure on medical ad veterinary health systems.

http://www.medicalnewstoday.com/articles/289505.php

DSCOVR satellite to keep an eye on solar storms

On Wednesday evening, a SpaceX Falcon rocket lifted off from Cape Canaveral, carrying the Deep Space Climate Observatory – DSCOVR into space. Developed by NASA, the observatory will take about 110 days to reach a solar-storm lookout point one million miles into space. There it will begin observations of Earth and the sun to provide advance warnings of incoming geomagnetic storms as well as continuous Earth views.

How satellite will protect us from solar storms:
http://www.vox.com/2015/2/11/8021449/spacex-launch-watch-live

TECHNOLOGY

Apple invests $850 million in massive California Flats Solar Project

Apple recently announced a deal to put $848 million into the California Flats Solar Project, a 2600 acre facility in rural Monterey, California, run by photovoltaic company, First Solar. Of the facility's total 280 MW output, Apple secured 130 MW by signing a 25 year contract – the industry's largest agreement to provide green energy to a commercial company. The move is in step with Apple's broader goal to inject more renewable energy into areas where it sets up shop. Earlier this month, Apple announced a plan to build a $2 billion solar powered data center in Mesa, Arizona. All its other data centers are now fueled by solar, wind or geothermal.

Is this a good deal or a bad deal, read Forbes opinion here: http://www.forbes.com/sites/christopherhelman/2015/02/13/how-much-is-apple-really-paying-for-power-in-its-850m-solar-deal/

Electric Car powered by saltwater

NanoFlowCell plans to unveil the Quant F, which is a completely re-engineered and re-deigned version of the world's first saltwater powered electric car Quant E at next month's Geneva Motor Show. The biggest update to the Quant F is its electric drive system, which now features a two speed automatic transmission that the Lichtenstein based company developed in-house. The Quant F is powered by a fuel-cell system and four electric motors that get their energy from the electrochemical reaction created by combining two liquids with metallic salts that act as an electrolyte generating a total of 1075 hp.

Full review here: http://www.hybridcars.com/500-mile-range-over-186-mph-all-electric-quant-f-to-bow-in-geneva/

Electric Car that glows in the dark

Nissan's newest auto is a Leaf electric vehicle that glows in the dark! To achieve the unique effect, the Japanese auto maker applied a special glow-in-the-dark paint to the EV that absorbs UV light during the day so that it can glow for eight to ten hours after the sun goes down.

http://www.usatoday.com/story/money/cars/2015/02/17/nissan-glow-cars/23537869/

INTERNATIONAL

Green power to light up the house next door

In Stuttgart, Germany, Wener Sobek has developed an active house that powers not only itself and 2 electric cars, but also the house next door. It does so by producing twice as much energy it needs – without fossil fuels, emissions or waste. The PV system on the roof of the house produces around 8300 KW hours of solar energy per year, roughly twice as much as required for building operations and to run two electric smart cars. The excess energy is used to power the listed building next door – the Weissenhof Museum.

Visit his website here: http://www.wernersobek.de/index.php?page=410

Mini Windmill for any home

Rotterdam, Netherlands company Archimedes has a created a small windmill that can be installed on just about any roof, anywhere. The product called LIAM, is a quiet affordable wind energy source that's ideal for urban settings – its compact and its yearly output averages between 300 and 2500 kW, depending on wind speed and roof height. You can also place more than one of these windmills on your roof for added power and combine them with solar panels so you have a backup source of energy on still days.

Watch a field test of windmill by The Archimedes here:
https://www.youtube.com/watch?v=i6QyBdPGbFE

The silent Dutch wind turbine that doubles as an apartment building

The Dutch Windwheel is a concept for a sustainable landmark that would be able to house 72 apartments within a circular steel and glass frame, while also serving as a silent, motionless wind turbine. In addition to harvesting energy from the wind, the structure would be equipped with facilities to catch rainwater, recycle tap water and also produce biogas from the resident's organic waste. The most striking detail of the Windwheel is the turbine that fills the inner ring of the building. The electrostatic wind energy converter (EWICON) is a technology that converts wind energy with a framework of steel tubes into electricity without moving mechanical parts.

Understand the EWICON technology here: http://www.zmescience.com/ecology/renewable-energy-ecology/dutch-windmill-energy-16022015/

Electric Vehicle Incentives in France

France is implementing a new initiative to financially compensate car owners who trade in a diesel vehicle, aged 13 years or more, for a fully electric vehicle or a plug in hybrid. The campaign comes from the Ministry of Ecology, Sustainable Development and Energy, and seeks to target older cars, which are responsible for a disproportionate percentage of greenhouse gas emissions. The dollar amount depends on the type of vehicle purchased, and ranges up to 10,000 euros if a fully electric vehicle is selected, or up to 6500 Euros for a plug-in hybrid.

http://www.thelocal.fr/20150205/frances-electric-car-owners-to-get-10000-bonus

INTERESTING READS

Considering Geo-engineering as way to deal with climate change, and the pros and cons: http://www.vox.com/2015/2/12/8020533/geoengineering-climate-change

Jupiter's Moon Europa and why scientists think that there might be life there: http://www.vox.com/2015/2/16/8045979/europa-moon-jupiter

Why does the US still read temperature in Fahrenheit? http://www.vox.com/2015/2/16/8031177/america-farenheit

Energy job postings for ESTP students

The following are the Energy jobs with deadlines coming up in the next two weeks. For application deadlines and requirements, please refer to Tartantrak.

Schlumberger – Research, Engineering, Manufacturing and Sustaining Engineers and Scientists

Energy Solutions – Energy Efficiency Project Manager

Bloom Energy – Engineering Internships

Green Corps – Organizers

Apple, Inc – Power Intern

Black & Veatch – Renewable Energy Engineering Intern

Bettis and Knolls Atomic Power Laboratories – Electrical Engineer

SunEdison – Solar Development Program, Summer Intern

AEI – Summer Intern, Environmental Policy

Persistent Efficiency – Electrical Engineer

To learn more about the Energy, Science, Technology and Policy Department please visit the website at http://www.cmu.edu/engineering/estp