Leading the Charge

Kenneth A. Walz

Wisconsin Academy’s Local Government Summit.
April 23, 2018
Let’s Examine Some Global Trends in Energy Consumption
We live at a historic time...

Source: Smil V. "Energy Transitions: History, Requirements and Prospects". Santa Barbara, CA, 2010
**global wind energy growth**

- Estimated 6.8 GW of wind added in the US in 2016
- Source: GWEC

**global solar PV energy growth**

- Estimated 13.9 GW of solar PV added in the US in 2016
- Source: IEA

**green electricity purchasing growth**

- Source: NREL

**global electric vehicle growth**

- Source: IEA
US Wind Energy Prices At "Rock-Bottom Levels," Says Berkeley Lab

August 18th, 2016 by Joshua S Hill

Wind energy prices in the United States "are at rock-bottom levels" and continue to remain attractive to utility and commercial purchasers, according to a new US-centric wind energy report.

Prepared by the Electricity Markets & Policy Group at Lawrence Berkeley National Laboratory (Berkeley Lab) for the US Department of Energy, the Wind Technologies Market Report confirmed several existing conclusions made in recent months about the US wind industry in 2015, and revealed several more. Prime among these conclusions is confirmation that wind prices are at an all time low, with newly built wind projects in the US averaging around 2¢/kWh thanks to technology advancements and cost reductions across the wind industry.
So how does this impact Madison College?
## Renewable Energy Certificate Requirements

**Take these core classes**
- Intro to Renewable Energy (20-806-291) Fall 3 credits
- Solar Photovoltaic Technology *(20-806-292)* Spring 3 credits

**Plus additional coursework from this list as needed to reach at least 9 credits total**
- RE for International Development (20-806-290) Summer Study Abroad 3 credits
- Solar Photovoltaic Installation Lab *(20-806-293)* Summer 1 credit
- Renewable Energy Honors Project (20-806-807) Fall or Spring 2-3 credits
- Renewable Energy Electives *(20-806-xxx)* Spring 1-3 credits
- Energy and Society ‡ (20-809-269) Spring 3 credits

**TOTAL CREDITS** at least 9

### Notes:
- # Students completing this course will be qualified to take the examinations required to earn NABCEP and ETA solar industry certifications.
- * Co/Pre-requisite knowledge or experience is required in electricity/ electronics/ electrical circuits.
- ‡ This course satisfies social sciences requirements for many four-year universities.
These are jobs that:

1) Pay a family supporting wage
2) Cannot be outsourced
3) Cannot be done by robots
4) Benefit society

President Trump may be focused on saving coal miners, but solar continues to be the hot spot in today's jobs market.
What are some local initiatives for Madison?
MADISON BECOMES FIRST WISCONSIN CITY TO COMMIT TO 100 PERCENT RENEWABLE ENERGY

In Wake of Federal and WI Environmental Protection Rollbacks, City Steps Up

Tuesday, March 21, 2017

Contact:
Elizabeth Katt Reinders, elizabeth.katt@sierraclub.org, 608-338-0094, 608-215-9601 (cell)

MADISON, Wisc. - Today, the Madison Common Council formally approved the city’s commitment to transition to 100 percent clean, renewable energy across all sectors including electricity, heating, and transportation. Madison represents the first city in Wisconsin and the biggest city in the Midwest to make a community-wide 100 percent clean energy commitment.

“I look forward to working with residents, schools, churches, businesses and our local utility as we begin transitioning to clean energy, community-wide. The benefits of a transition to 100% clean energy are many. These goals will drive a clean energy economy that creates local jobs, provides affordable and sustainable electricity, and results in cleaner air and water. I am proud to be a part of this council that has made the historic commitment that will lead our community to a more sustainable future,” said Alder Zach Wood.

In an important first step towards achieving the community-wide 100 percent clean energy goal, the Madison Common Council vote allocated $250,000 to develop a plan by January 18, 2018 for city operations to achieve goals of 100 percent renewable energy and net-zero greenhouse gas emissions. This plan will include target dates for reaching these goals, interim milestones, and budget estimates for the transition.
THE PRESIDENTS’ CLIMATE LEADERSHIP COMMITMENTS

Climate Leadership Statement

We, the undersigned presidents and chancellors of colleges and universities, believe firmly in the power, potential, and imperative of higher education’s key role in shaping a sustainable society. Not only are we deeply concerned about the increasing pace and intensity of global climate change and the potential for unprecedented detrimental impacts, but we also understand that technology, infrastructure, global interconnectedness, and our greatest asset – engaged, committed, smart students – allow us to explore bold and innovative solutions and to lead in climate action and sustainable solutions.
Madison College Announces Large Rooftop Solar Project

Posted by Joseph Bebon on June 12, 2017

Madison Area Technical College (MATC) will add $1.8 million to a grant from utility Madison Gas and Electric (MGE) to build a 1.4 MW solar PV system atop the school's main Truax Campus building in Madison, Wis. MATC says the system, which will be visible and accessible to students, will serve as a demonstration of new, clean energy technology at work in the community and could save the campus more than $200,000 per year.

“Once installed, our system will be the largest rooftop PV system in Wisconsin,” claims Ken Walz, MATC chemistry and engineering instructor and director of the Center for Renewable Energy Advanced Technological Education (CREATE). “On a sunny day, the system will reduce the college’s peak electric load by about 50 percent. Averaged over an entire year, it will offset about 10 to 15 percent of the college's total electric consumption.”
What is the #1 challenge for the Renewable Energy Program at Madison College?

A: Enrollment!
Building Student Pathways Initiative…

July 10-12, 2018

The Third Annual
STEM Educator
Solar Institute

Sponsored by the
Center for
Renewable
Energy
Advanced
Technological
Education

MADISON AREA TECHNICAL COLLEGE
WI STEM Teachers Install Solar Systems

+ classroom instructional materials
Thank you for your attention!

For More Info see: www.CreateEnergy.org

Questions?