U.S. Best Practices in College Sustainability/ Top 5 Careers Hiwassee College 4-4-14

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Small-scale Energy Efficiency Initiatives

By implementing lower cost efficiency upgrades, and using behavior changing tactics, the overall energy consumption on a campus can be reduced.

Campus examples:

- **Harvard University**
- **Emory University**
- **University of Tennessee**
- **Ohio University**

Harvard University (MA)

Students in dorms turned off their computers, lights, appliances and heat before leaving for Thanksgiving break saving 329,000 kilowatt hours of electrical energy.

Emory University (GA)

Emory held an event where all the key buildings went dark for one-half hour to promote awareness of energy conservation. In addition to turning lights out on campus, alumni were encouraged to participate as well.

University of Tennessee

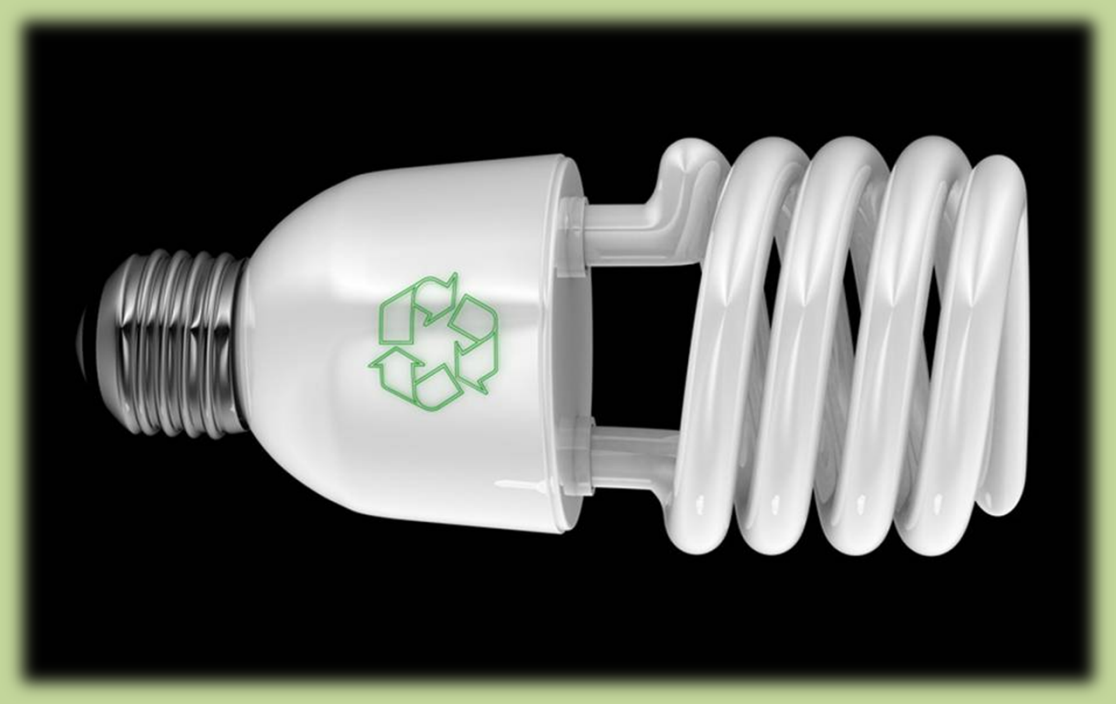
UT purchased 1,760 CFLs (Compact Fluorescent Lamps) to exchange for bulbs from students' desk lamps, saving $4,190 and 60 tons of CO2 in a single semester.

Ohio University

Ohio University uses Computer Management Software that shuts down computers when they are not in use. Saving the university 15,150,000 kilowatt hours and 15,000 tons of CO2.

Large-scale Efficiency Initiatives

To reduce campus greenhouse gas emissions, campuses have implemented higher cost efficiency upgrades. These projects have a long-term impact.



Campus Examples:

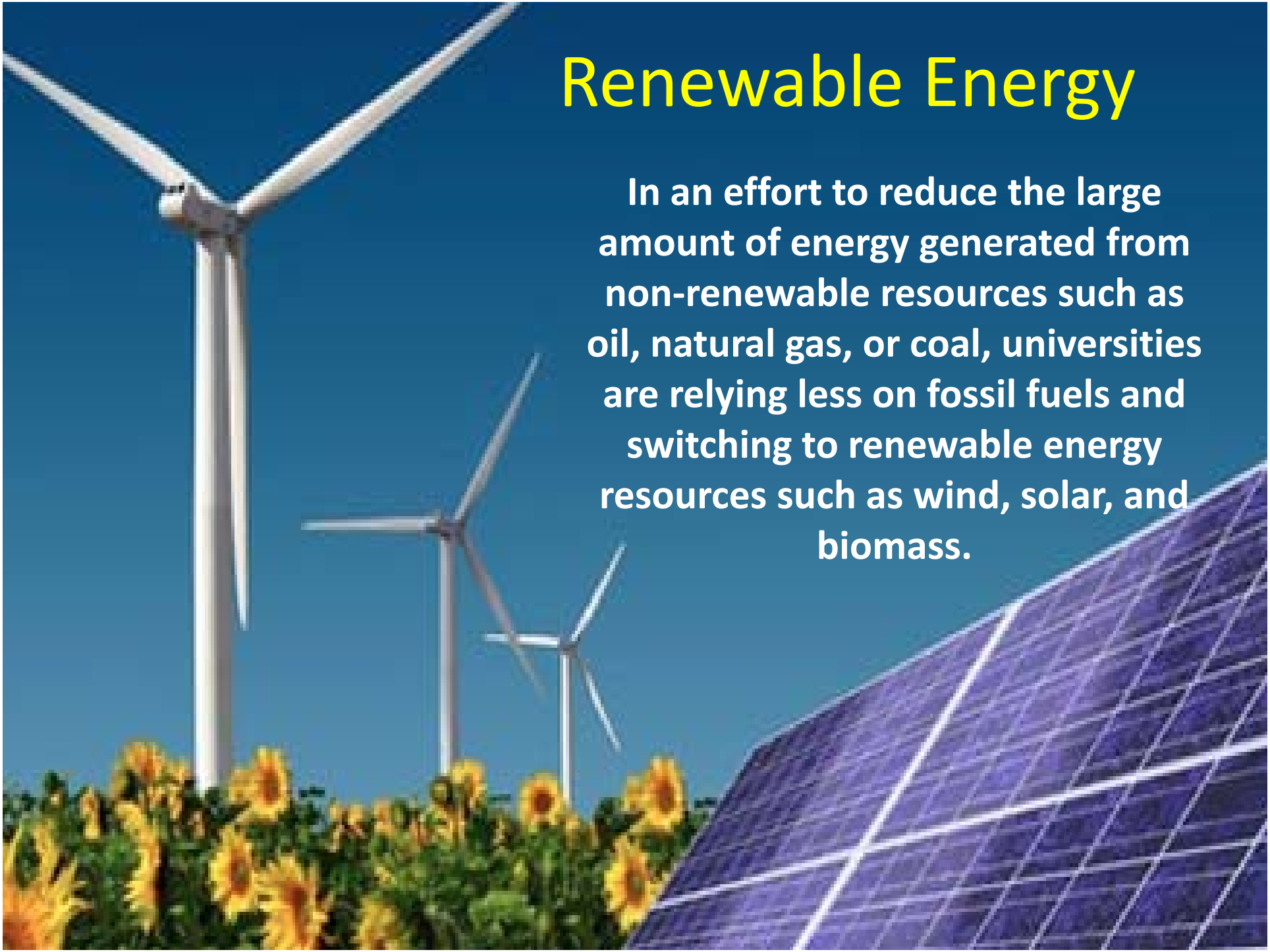
- Bucknell University
- University of Hawaii

Bucknell University (PA)

Bucknell University converted its conventional coal-fired heating plant to a cogeneration facility fueled by natural gas in 1998 which led to big reductions in greenhouse gases—about 44% below 1990 levels.

University of Hawaii at Hilo

UH expects to save $6.6 million in energy costs, and $200,000 a year in maintenance costs from upgrading its lighting system, replacing its main chiller with a high-efficiency model, and installed a building automation system to control air-conditioning


Renewable Energy
In an effort to reduce the large amount of energy generated from non-renewable resources such as oil, natural gas, or coal, universities are relying less on fossil fuels and switching to renewable energy resources such as wind, solar, and biomass.

University of Vermont

The University of Vermont has installed a small-scale 10 kilowatt wind turbine which is expected to generate 3,000-5,000 kilowatt hours of electricity per year

University of South Carolina

USC is starting a $19 million high-tech biomass energy plant which will annually consume an estimated 57,000 tons of tree waste and save $2 million a year in energy costs.

Transportation

In an effort to reduce greenhouse gas emissions from student, faculty, and university vehicles, campuses are implementing innovative methods to reduce vehicle fuel usage.

Campus examples:

- **University of Washington**
- **Louisiana State University**

University of Washington

The University of Washington sponsors the Ride in the Rain Challenge every January, prompting 800 cyclists to commute by bike even during bad weather, saving a pound of CO_2 for each mile they pedal.

Louisiana State University

LSU converts its cafeteria cooking oil into biodiesel to make 50-gallon batches of biodiesel two times per week.

Campuses are buying locally-grown and organic food to reduce the use of fossil fuels in almost every step of conventional food production. Also, university dining services are starting sustainable dining initiatives that are based on seasonality, prioritizing food that is sourced locally from farmers who practice sustainable agriculture.

Stanford University (CA)

Stanford University supports community-based growers, by buying milk and meat locally, utilizing biodegradable food containers and utensils.

Princeton University (NJ)

In order to reduce food waste from ending up in the garbage, Princeton University (NJ) collects food waste from dining halls sends it to a local pig farm for feed.

Environmental Procurement

In order to help preserve natural resources and reduce pollution, campuses are purchasing environmentally preferable products.

Ohio State University

OSU has adopted a new policy which ensures that copy paper used on campus contains at least 30% recycled materials.

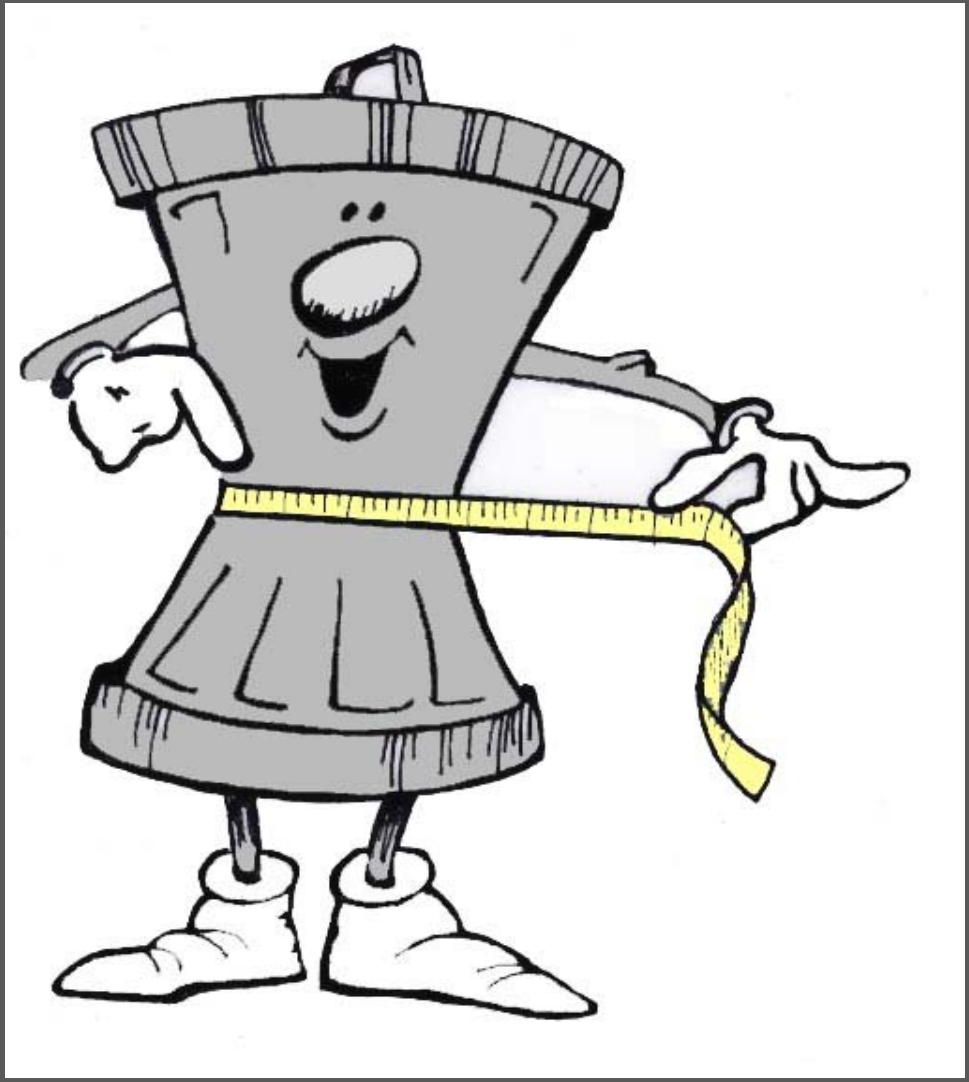
Georgia Tech University

GT is installing No-Touch Hands Free Paper Towel and Tissue Dispensers, which will use Green Seal certified paper towels and toilet tissue.

University of Wisconsin- Green Bay

UW replaced foam and paper dishware with biodegradable plates made from corn, potatoes, and limestone in each of the university's five dining facilities.

Waste



The disposal of products indirectly or directly contribute to the concentration of greenhouse gases in the atmosphere, affecting the global climate. Colleges and universities are implementing waste prevention and recycling programs that offer significant potential for decreasing greenhouse gas emissions.

University of Idaho

UI sponsored a demonstration called "Trash Talk" that advocated the slogan "Use Less, Recycle the Rest." The students sorted through residence hall dumpsters and displayed all of materials from the garbage bags that could have been recycled, composted or reused.

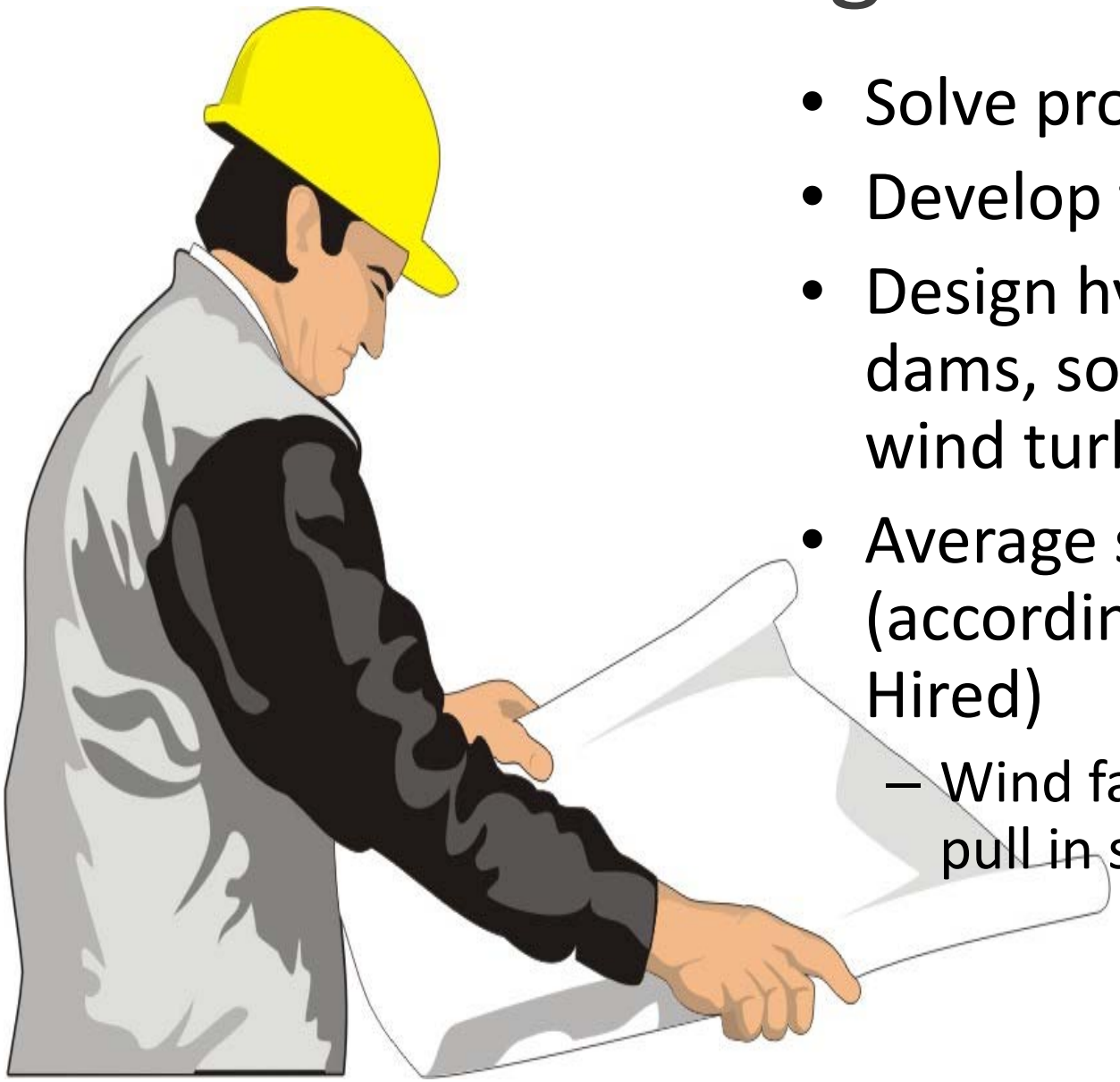
University of Arkansas

The University of Arkansas recently began "Recycling with the Razorbacks," a program that places green recycling boxes at all home football and basketball games and has collected more than 36.5 tons of recyclables.

Top 5 Renewable Energy Careers

1. Wind-turbine Fabricator, Installer, Operator
2. Wind-farm Developer
3. Solar Fabricator/Installer
4. Farmer
5. Engineer

5. Engineer



- Solve problems
- Develop technology
- Design hydroelectric dams, solar cells and wind turbines
- Average salary of $64,000 (according to Simply Hired)
  - Wind farm engineers can pull in six figures

4. Farmer

- Provides energy sources for humans (producing fruits, vegetables, etc.)
- Grows food for automobiles and clothes dryers
- Produces products for ethanol and biofuel

3. Solar Fabricator/Installer

- Solar water heaters/pool heater installation
- Construction, mechanics, or electrician backgrounds are helpful
- Hourly pay can range from $15 - $20 depending on experience

2. Wind-farm Developer

- Opportunities are endless
- Wind-farms are popping up in increasing numbers
- Industry is growing
- Great career if you care about cleaning up the electrical grid

1. Wind-turbine Fabricator, Installer, Operator

- Increasingly growing field
- Openings in every stage of development
  - Building, installing, setting up, fixing etc.
- Backgrounds in engineering, construction, electrical, mechanical work and heavy machinery work are helpful
- Relative job security

Sources

1. "Campus Sustainability Best Practices A Resource for Colleges and Universities."*Massachusetts Executive Office of Energy and Environmental Affairs*. N.p., Aug. 2008. Web. <http://www.mass.gov/eea/docs/eea/lbe/lbe-campus-sustain-practices.pdf>.

2. Layton, Julia. "Top 5 Renewable Energy Careers" 29 August 2012. HowStuffWorks.com. <http:/money.howstuffworks.com/5-renewable-energy-careers.htm> 23 September 2013.