WIND PROGRAM

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

U.S. Department of Energy Collegiate Wind Competition

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U.S. Department of Energy Collegiate Wind Competition

- Interdisciplinary challenge centered around turbine design, construction, performance, marketing
- Designed to attract undergraduate students into key wind industry professions, introduce the industry's market challenges, and provide hands-on experience with wind technology
- Takes place over the academic year
- Culminates in a multi-day, three-contest competition
- Next event: Spring 2016

COLLEGIATE WIND COMPETITION
U.S. DEPARTMENT OF ENERGY

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2014 Collegiate Wind Competition

- Inaugural event in 2014 at AWEA WINDPOWER in Las Vegas, NV
- Over 150 students from 10 competitively-selected universities across the country
- Diverse turbine designs:



- Sponsored by:

GE Vestas AWEA American Wind Energy Association BLATTNER ENERGY

Guiding Principles of the Competition

1. Providing real-world experience for future leaders of the wind industry through team collaboration across educational programs
2. Recognizing the innovative collegiate educational programs and forward-thinking professors that incorporate renewable energy technologies, helping foster the growth of the future wind energy industry and workforce in the areas where it is needed most.
3. Providing a safe and fair competition.
4. Creating a positive experience that will carry into future competitions.
5. Creating opportunities for industry to engage with the competitors (prospective employees).
6. Providing a high quality competitive environment
7. Engaging K-12 students in the competition to increase future entrance into higher academia

Students make final adjustments to their turbine prior to testing in the wind tunnel


Build. Present. Deliver.


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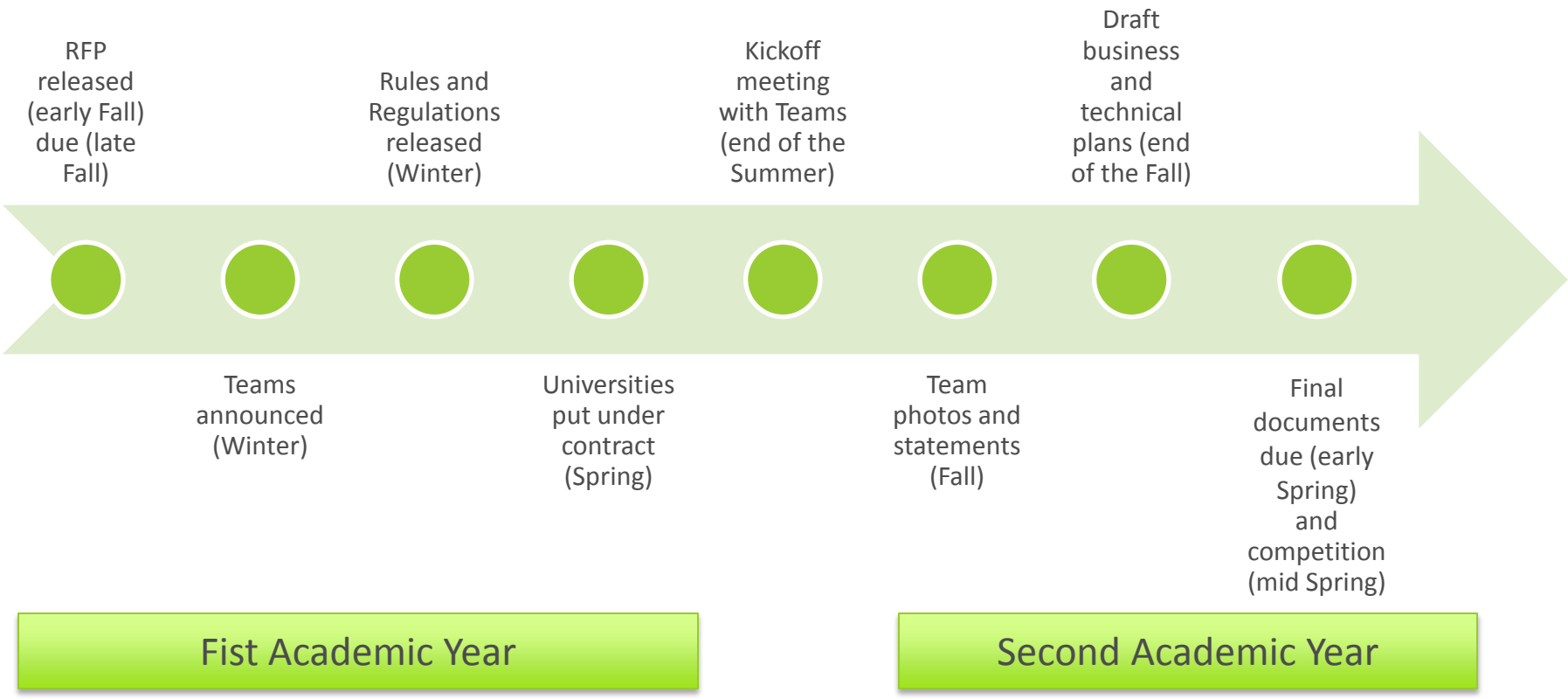
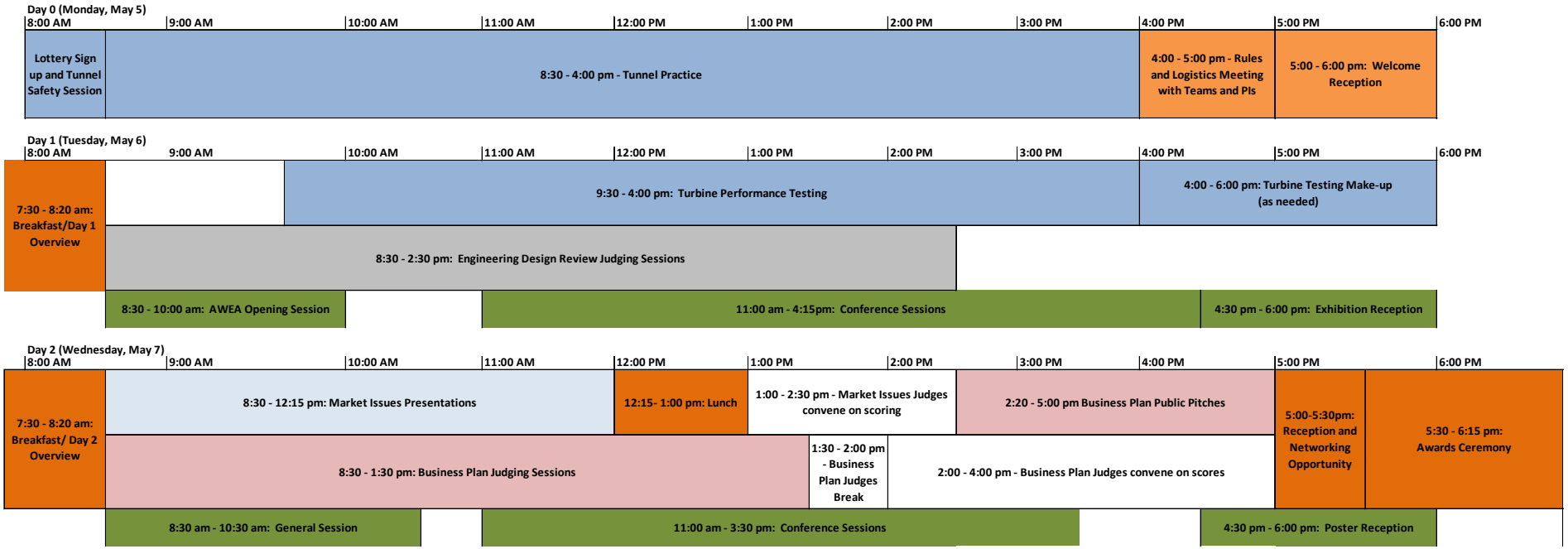
Basic Competition Timeline



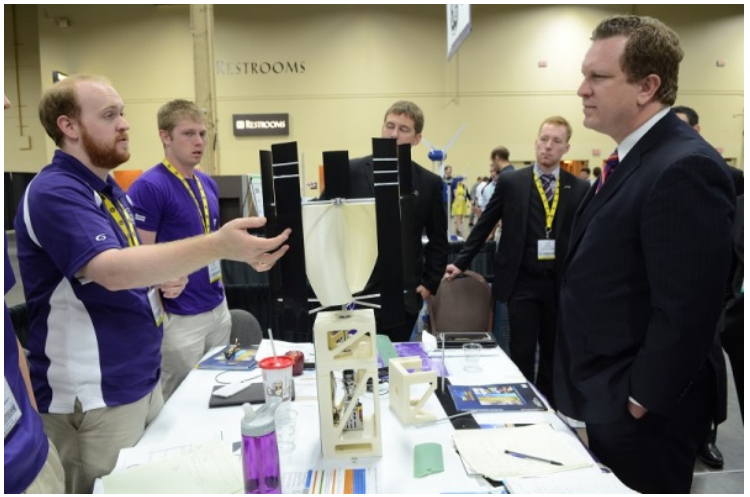
2014 Event Schedule

- Event takes place over three days, with the first dedicated to practice in the wind tunnel – giving each team an opportunity to test their device
- Second day focused on tunnel testing and engineering review
- Third day focused on closed door and public evaluation of business plan and product deployment strategies.



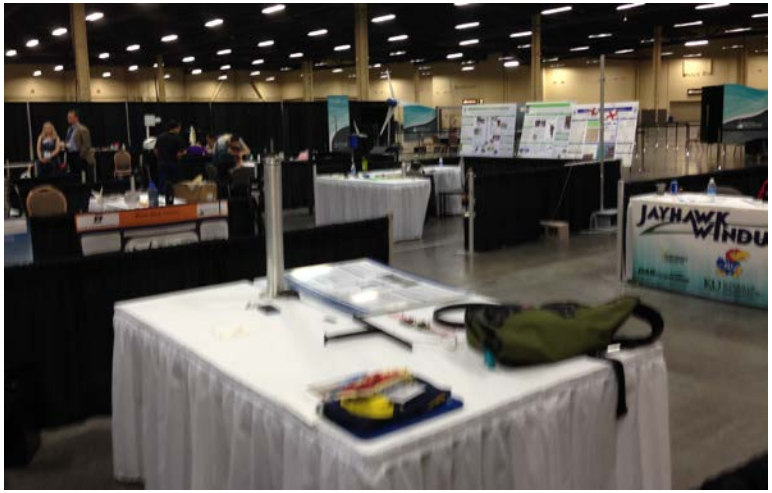
Competition Experience

A vibrant, collaborative environment with a strong community feel, allowing direct engagement between participants, schools, and industry.



Engagement with industry and governmental leaders

On the ground engineering work, making it all work



Open bullpen's to allow team collaboration

CWC14 Panel of Expert Judges

Engineering Design Review
- Ben Polito, President and Co-Founder of Pika Energy
- Charles Newcomb, Director of Technical Strategy at Endurance Wind Power
- Trudy Forsyth, Managing Director of Wind Advisors Team

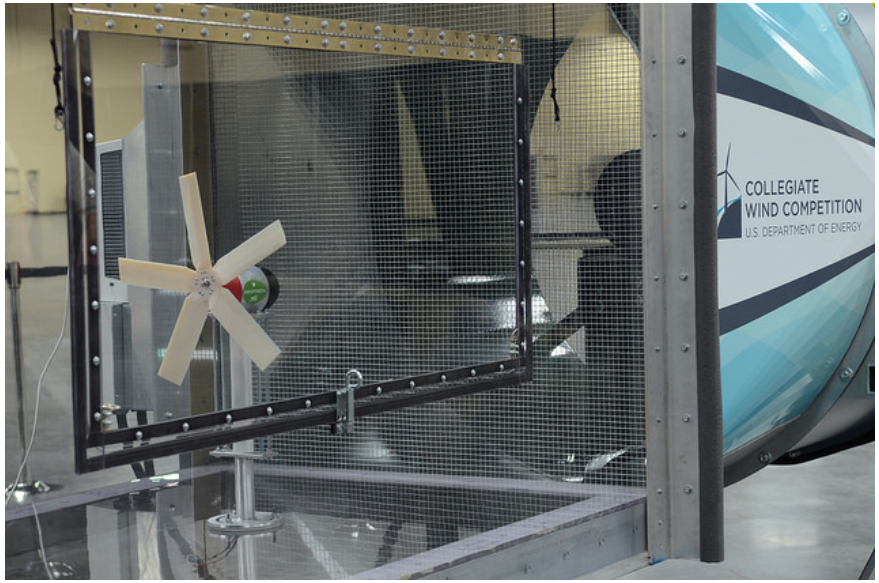
Business Plan
- Justin Kaster, Co-Founder and Executive Director of Cleantech Open, Midwest Division
- Bruce Eastman, Chief Operating Officer of Inovus Solar
- Ralf Sigrist, Attorney-at-Law/Consultant

Market Issues
- Fara Courtney, Founding CEO, U.S. Offshore Wind Collaborative
- Larry Flowers , Consultant, G4Wind LLC (retired Deputy Director, AWEA Distributed and Community Wind)
- Rich Vander Veen, President of Mackinaw Power LLC

Business Pitch
- Haley Estes Roberto, President of Harvest the World Network
- Troy Patten, President and CEO of Northern Power Systems
- Mike Derby, Wind Energy Research and Development Program Manager at U.S. Department of Energy
- Keith Longtin, General Manager of Wind Products at General Electric

Wind Tunnels

- Each teams turbine will be tested in one of two CWC wind tunnels
- Tunnel cross section is ~4 x 4 feet, with a test cross section is 45cm x 45cm x 45cm
- Not a research quality tunnel, but good flow quality
- Turbines mount on a defined mounting platform
- Can test either vertical or horizontal turbine systems



Recognition and Feedback

All teams reported that the CWC was a great experience for students and faculty.

Comments included:

- “Outright success”
- “Overall good and actual event was fantastic”
- “One of the better design competitions our students have competed in”
- “A tremendous experience, even for someone who didn’t get to go”;
- “I say, ‘bravo!’”

Dedication of Penn State’s turbine in the lobby of the DOE Forestall building

Awards provided in several areas

2016 Collegiate Wind Competition

Special Notice:

Released through Federal Business Opportunities website on September 16, 2014

Request for Proposals:

The solicitation for teams interested in taking part in the 2016 event is expected to be released in late October through the Federal Business Opportunities website

Event Date and Location:

Expected to take place in May of 2016, potentially at the AWEA WINDPOWER Conference and Expedition in New Orleans, LA

CWC16 Theme:

Design and construction of a wind-driven power system to supply electricity to non-grid connected device(s) for off-grid applications.

For Information:

Visit wind.energy.gov/windcompetition

Sign up for the WINDExchange e-newsletter wind.energy.gov/windexchange

How to Get Involved

Universities and Colleges

- Read the Special Notice
- Start forming teams and start formulating ideas
- Review 2014 team portfolios available on the website
- Keep an eye out for the RFP

Industry or other organizations

- Contact your local university to see if they are interested
- Engage with trade groups (AWEA, DWEA, WEF) who are supporting the event
- Contact DOE/NREL if you are interested in providing direct support

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