COMET WIND

April 2024

Outreach strategy and team story report

Prepared for the 2024 Collegiate Wind Competition Organizers and the U.S. Department of Energy

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UT DALLAS

COLLEGIATE WIND COMPETITION
U.S. DEPARTMENT OF ENERGY

Recruitment

Approach to Team Growth

This year, Comet Wind decided to approach campus outreach and recruitment with a new strategy: emphasizing the social aspects of the competition team. We discovered that the Comet Wind serves as more than an academic club. It is a community of hardworking friends who share a passion for innovating a sustainable world. Therefore, we hosted plenty of social and trivia events. We also continued using our typical recruitment methods: social media, flyers, organization fairs, and networking events.

Diversity and Inclusion Initiatives

Comet Wind hosted several events to celebrate and encourage diversity this year. We had a cultural potluck, a collaboration social with the Society of Hispanic Professionals and Engineers, and a social with the Association of Latin American Students. Our current leadership team also pursued a diversity initiative to have women in leadership positions for the following year. They reached out to capable women within the club and encouraged them to run for leadership positions.

Team Composition

Major	
Mechanical Engineering	37%
Electrical Engineering	40%
Computer Engineering	7%
Computer Science	13%
Geoscience	3%

Grade Level	
Freshman	10%
Sophomore	23%
Junior	37%
Senior	23%
Graduate	7%

Race	
Hispanic or Latino	22%
White	32%
Black or African American	3%
Asian or Pacific Islander	38%
Native American	5%

Member of LGBTQIA Community	
Yes	27%
No	63%
Maybe	10%

Age	
Mean	22
Median	21
Mode	20
Range	21

Gender	
Female	44%
Male	53%
Other	3%

Reflection

Our approach paid off, as this year our campus interest, retention, and activity improved. At the end of the 2022-2023 competition year, we had 25 active members. Now, we have 30. Of our current membership, 12 joined at the beginning of this year. Considering the members we lost to graduation, we are proud of our effective recruitment strategy. We also established more organized subgroups this year. Having more defined roles within the club had the effect of more fulfilling work for our active members. When we asked returning members about this change, they felt efficiency had improved overall.

At the beginning and end of the school year, we surveyed our members about their self-perceived knowledge of wind energy, ability to obtain a career in the wind industry, and belief in wind energy's essential role in the transition to a renewable future. The average ratings for these results increased by 123%, 125%, and 25% respectively! We were impressed with these statistics in comparison to last year's of 54%, 36%, and 5%. Our results taught us that this year, we made a more engaging club experience and convinced people inexperienced in wind to eagerly join us.

Social Media

End of Spring 2023 (April)

Instagram	
Posts	25
Followers	161
Average views	117
Average likes	18
Total likes	450

TikTok	
Posts	38
Followers	260
Average views	49348
Average likes	2140
Total likes	81400

End of Spring 2024 (April)

Instagram	
Posts	54
Followers	366
Average views	187
Average likes	29
Total likes	1569

TikTok	
Posts	40
Followers	262
Average views	46993
Average likes	2043
Total likes	81729

Our content continues to have the highest relevance when searching under the hashtag #collegiatewind on TikTok, which hopefully has increased awareness of the Collegiate Wind Competition.

Reflection

In adherence to our midyear plans for our social media accounts, we continued to post on Instagram, Facebook, and TikTok. We are extremely proud that we doubled our follower count on Instagram. This was accomplished by posting more and increasing our participation in campus outreach events. People have become more invested in our competition journey and our infographics. Our time was invested into our main three events and Instagram this year, so we are satisfied with our steady progress, which has introduced us to greater audiences. We have gained a large audience on social media so far, and we hope to have further growth to show more people what Comet Wind does.

Three Connection Creation Contest Activities

#1: Understanding the Wind Energy Industry

Contact	Origin of Relationship	Sector of Industry	Attendance
Bill Branca	Professional connection through Dr. Griffith	Management	5
Carsten Westergaard	Professional connection through Comet Wind alum	Novel design and entrepeneurship	3
Eduardo Rangel	Profession connection through Comet Wind alum	Offshore wind foundation manufacturing	4
Kelsey Shaler	Professional connection through Linkedin	Offshore wind R&D	4

Reflection

Our team decided on “Understanding the Wind Energy Industry” as one of our three events because we wanted all of our members to have the opportunity to interact with professionals in the field. Many of our members are looking to enter the wind industry after graduation, and the advice given by our interviewees has proven to be invaluable for graduates. Our end-of-the-year survey revealed that the interviews helped provide clarity into the vast options of the wind energy industry and further encouraged interested members to pursue careers in wind energy. Our members also reported increased confidence in networking and writing their resumes.

The team benefitted a lot from our interview with Bill Branca because of our close relationship with Leeward. Bill Branca manages the Leeward development team, which develops clean energy projects and guides them through construction and operation. His insight and advice made a notable impact on the performance of our Project Development team. He also connected us with other project development employees at Leeward, who were able to advise our competition team. Three of our members secured internships at Leeward this summer! Carsten Westergaard's story was very inspiring because he had an idea for a company and just did it. He opened our eyes to the clean energy market. The interview with Eduardo Rangel was great because we got to learn about a side of the industry, manufacturing, that most of us don't have experience with. Currently, one member of our team has an application sent to RCAM Technologies. The interview with Kelsey was extremely beneficial to our many members interested in research. Multiple members admitted that her interview helped them decide what technical skills to develop over the summer. Because not everyone could make it to the interviews, the notes are shared on our Discord. All of our industry connections also agreed to stay in touch with us if we ever needed to ask more questions.

The Comet Wind Connection Creation team also interviewed our graduate advisors Dan Bouzolin and Dr. Jeanie Aird to learn about their career paths. The turbine design team continues to stay close in touch with Dan and the connection creation team continues to confer with Dr. Aird for ideas.

#2: Student and Local Community Engagement

One of our high-level outreach goals this year was to reach out to younger generations and get them excited about clean energy. To achieve this goal, we reached out to Plano Public Library, an organization we worked with last year, to collaborate on a large-scale dedicated event about wind and clean energy. Our event was dubbed "Harness the Wind: Clean Energy." We wanted to provide a creative experience to young children and their families. Our team decided on a station-based event with different activities that included engineering, arts, and also various fun games. We had a total of six stations:

Alternative Energy Trading Cards – A pack of 18 custom trading cards created by Comet Wind based on a variety of energy sources. Students got to pick out a trading card they wanted if they could beat us in a card game of their choosing. Was made professionally with recycled paper!
Build Your Own Wind Turbine – Modified KidWind MacGuyver Challenge where the participant can make and decorate wind turbine blades made of paper.
Snap Circuits – Interactive toy that teaches electricity fundamentals like resistance, current, and voltage.
Turbine Tour – Our technical lead gave an informative tour about Comet Wind's 2023 wind turbine
Clean Energy Jeopardy – A clean energy twist on the classic game show Jeopardy!

Comet Wind also made a stamp card that the participants can check off whenever they completed a station. If they managed to get four stamps or more, they got a special sticker designed by us!

Reflection

Our event "Harness the Wind: Clean Energy" turned out to be a great success! The event met our outreach goal of providing memorable teaching experiences to young students. The engagement methods we employed, such as stamp cards, stickers, and candies, were highly effective in getting the students to explore all that we had to offer. In particular, our engineering stations, Build Your Own Wind Turbine and the Turbine Tour, were the most popular stations. We believe that our efforts were able to guide many students into developing an interest in engineering and clean energy. In total, we had 34 people come to the event. Most of the students and their families stayed for the whole duration of the event. Although our main focus

was with “Harness the Wind: Clean Energy”, we also maintained relationships with connections we made in the past. We continued to hold workshops with Noorishment, an organization focused on providing educational opportunities to refugees, and the Girls Scouts.

#3: Execute a Cross-Technology Collaborative Opportunity

Our team chose to do a cross-technology collaborative opportunity because we are passionate about energy diversity and believe it is vital to the energy transition. Our team also highly values education and its role in forming future workers in the clean energy industry. Taking inspiration from a school activity that inspired one of our members to pursue a career in sustainability, we decided to work with a classroom on a semester-long project to design a futuristic city entirely powered by different forms of clean energy. In the fall, we communicated with a contact in the Plano Independent School District and a few other backup schools to find a set of students to work with. There were not any schools in Plano ISD that had the time in their curriculum to work with us, but we found a space with Ms. Riley’s AP Environmental Science Class at John H. Guyer High School in Denton. Ms. Riley invited us to completely take over five class periods for her energy unit. In our lectures, we followed the course curriculum but also went more in-depth on clean energy and sustainability topics to prepare the students for the creative activity. We explained the geographical and meteorological conditions required for various types of clean energy and pointed out the potential of cogeneration, integrated energy, and smart sustainable city design. Because of the resilience of wind energy, each group of students was required to build their city with a wind farm *and* at least two other forms of energy. To get more hands-on experience with wind, they also built a mini wind turbine from a purchased kit.

Reflection

Comet Wind worked hard to make our activity with Ms. Riley’s class a truly immersive experience for the students. Ms. Riley expressed satisfaction that we were able to cover a greater volume of content than the AP guidelines and include more topical information as well. In the end, we helped 33 junior to senior year students seriously consider the interdependencies of clean energy sources and use the ideas of their discussions to invent their clean energy future.

On Campus Promotion and Recruitment		
Event	**Team Attendance**	**Participant Attendance**
Summer Organization Fairs x8	6	160
Project Management Workshop	9	15
Wind Tunnel Tour	2	11
Leeward Guest Speaker	7	10
First Club Potluck	15	15
Club Cultural Potluck	10	36
Wind Energy Lab Tour x6	4	13
Bakesale x2	6	32
Trivia at "Love the Earth"	3	25
Trivia at National Engineers Week	8	57
Total	**70**	**374**

Photos

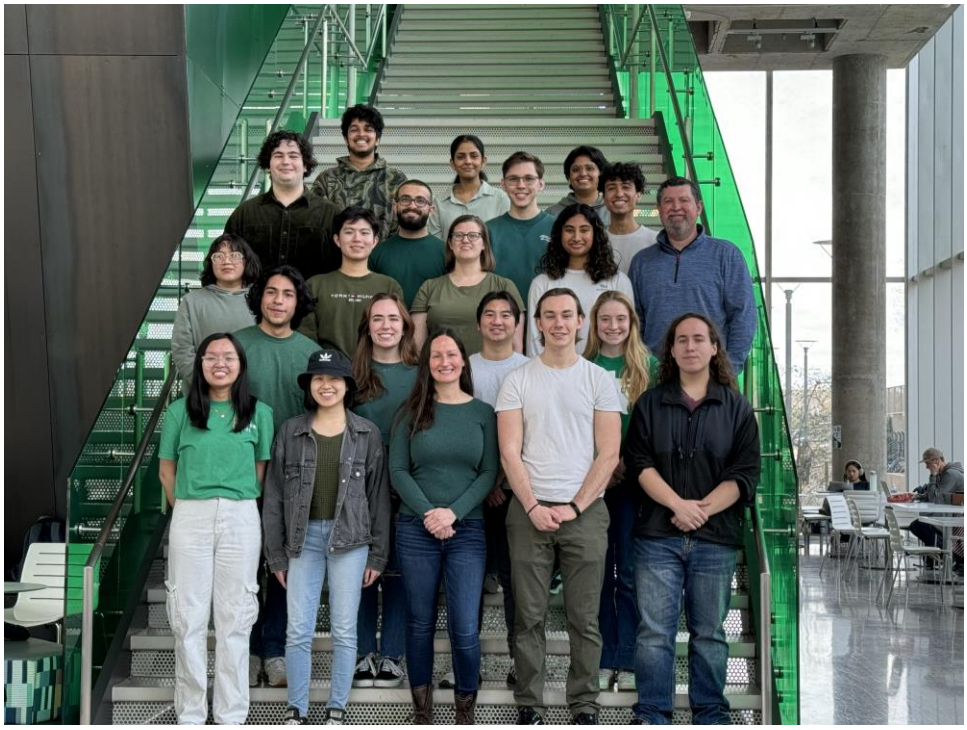

Figure 1: Team picture of the 2023-2024 Comet Wind team

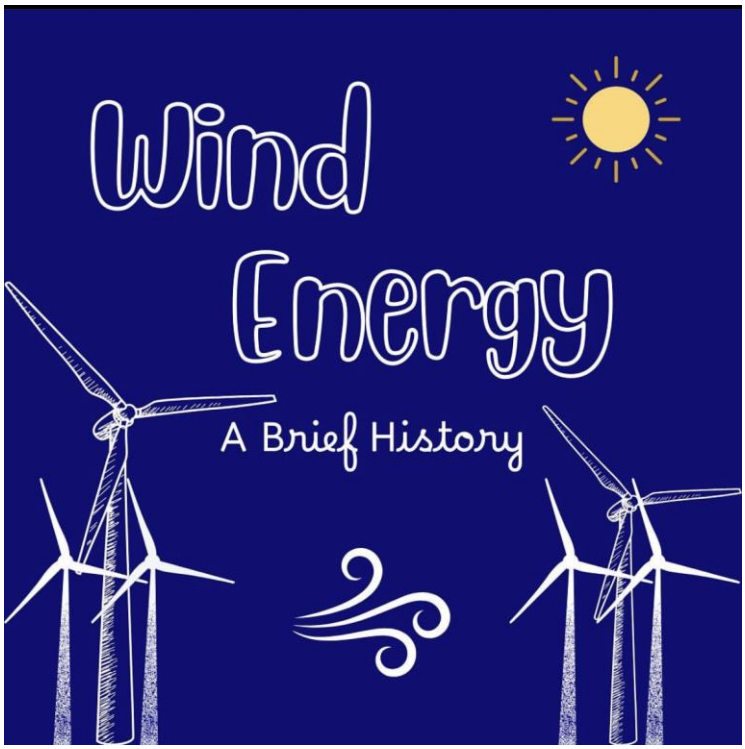

Figure 2: An infographic about the history of wind energy uploaded to social media

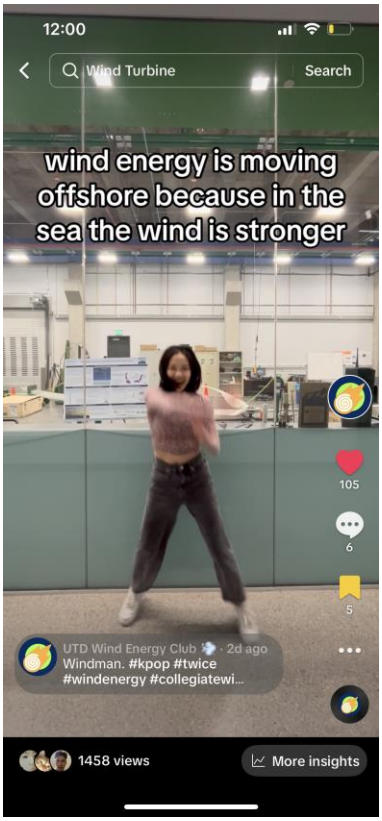

Figure 3: One of our TikToks

Figure 4: Custom clean energy trading cards made for “Harness the Wind: Clean Energy”

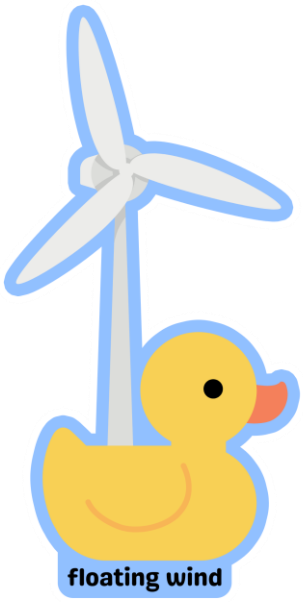

Figure 5: Sticker designed by Comet Wind

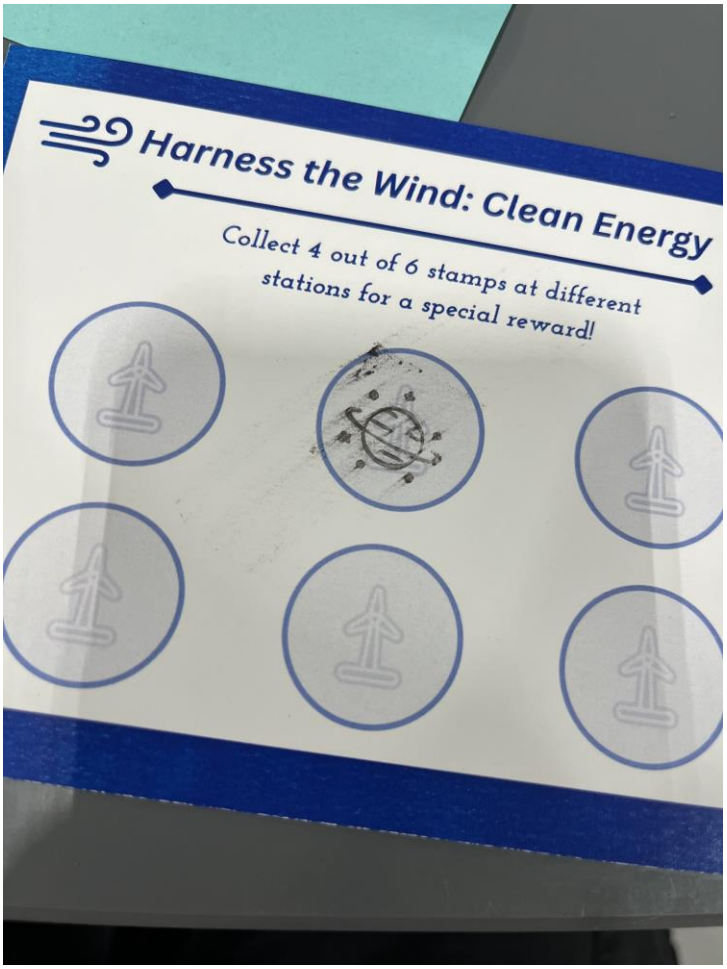

Figure 6: Stamp card for “Harness the Wind: Clean Energy”

Figure 7: Event photo of “Harness the Wind: Clean Energy”

Figure 8: Event photo of “Harness the Wind: Clean Energy”

Figure 9: Event photo of volunteers at “Harness the Wind: Clean Energy”

Figure 10: Team working on their integrated energy city model

Figure 11: Team working on their integrated energy city model

Figure 12: A finished model of a team's integrated energy city model

Figure 13: A collection of every team's integrated energy city model

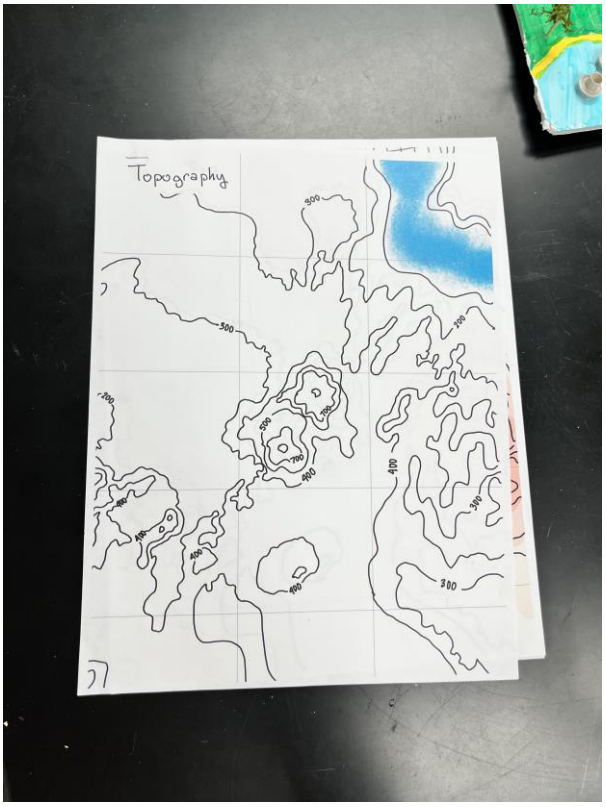

Figure 14: Picture of topography made for the integrated energy city model

Figure 15: Students working on the hands-on wind kit

Figure 16: Students working on the hands-on wind kit

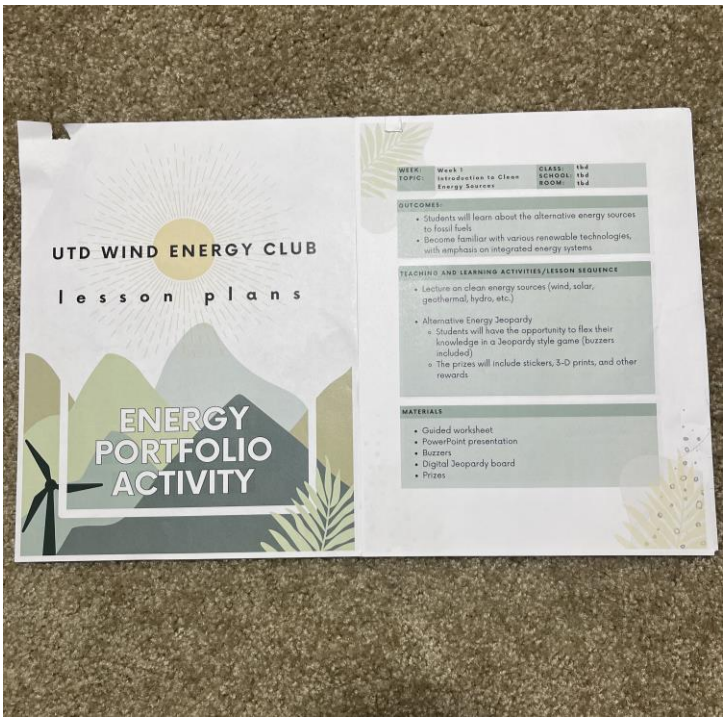

Figure 17: Picture of lesson plans for Guyer High School