Penn State Wind Energy Club Metrics Report

May 4, 2023

Recruitment

The Pennsylvania State Wind Energy Club (PSU WEC) has participated in several recruiting events where we recruited a diverse group of team members. At the start of the 2022-23 school year, 16 members returned. Through various forms of recruitment, such as multiple Club Involvement Fairs, posters around campus, and by word of mouth, 61 new members signed up for the club. This equates to a total of 77 members. This number reflects those who joined in the beginning of the school year but does not reflect if they have graduated or left the club after the fall semester. Our demographics survey was done in the Spring Semester, however, not all current members have taken it. The facts and figures below are estimates of our club demographics and attendance based on the voluntary responses of 38 of our members.

About 78% of our members are engineering majors. As seen in Figure 1, the percentage of majors can be broken down further into 26.7% Electrical Engineering, 17% in both Aerospace Engineering and Mechanical Engineering, 10 % Computer Science or Engineering, 7 % Energy Engineering and Finance, 2% Environment Resource Management, Biology, French, Economics, Material Science, and Energy Business, and Management. Our team's gender ratio aligns with global renewables workforce stats and surpasses gender diversity in global wind energy. As seen in Figure 2, our club identifies as 32.4% female, 64.9% Male, and a small margin of 2.7% chose not to report. Of this percentage, 7% are African American or African, 2 % are American Indian or Alaskan Native, 38% are Asian or Pacific Islander, 6 % are South/Central American, and 47 % are White/Caucasian (Figure 3). The breakdown across year in school leads with fourth-year students at 32%, third-year students at 22%, second-year students at 15%, and first-year students at 29% (Figure 4).

Our focus this year was to gain a diverse group of students from a broad range of majors. Though our club is still overwhelmingly Engineers, we attained our goal of a diverse team in different ways. We have gained more women into our club. In the previous year, we had an estimated 10-15% of the team who were women-presenting. Our 15-20% increase in women is clearly evident as the leadership executive board recently elected for next year's team is all women. This includes having our first female president and vice president. Along with this, we have a strong presence of first year students who will continue to carry on the team's legacy as there are many graduating seniors.

Social Media

We have social media accounts on all major platforms: Instagram, Facebook, Twitter, and LinkedIn. Our initial goals for the semester were to be more active on all of our accounts. As the semester progressed, we decided to dedicate our time and effort towards Instagram, Facebook, and LinkedIn. We realized that most of followers (current members, alumni, general followers) use these three social media applications the most, with Instagram being the most popular.

By allocating additional time to our three accounts, we maximized our content and expanded our reach to a wider audience. Starting in June 2022 until April 2023, we have made a total of 75 posts on Instagram and Facebook. Not reflected will be the additional 5-10 posts that are made after the writing of this report. We averaged 41 likes per post on Instagram and 6 likes per post on Facebook. Figure 5 shows the average number of likes on Instagram per month. Our numbers have stayed fairly consistent throughout the fall semester, starting in August. On LinkedIn, we made only two posts. Each post has 2 to 8 likes respectively. We shared links to internship/job opportunities that our Industry Professional gave.

In Figure 6, we outline our increase in followers in all of our social media accounts. In June 2022, we had 252 followers on Instagram, 110 followers on Facebook, and 26 followers on LinkedIn. By April 2023, we

have 375 followers on Instagram, 120 followers on Facebook, and 60 followers on LinkedIn. Instagram had a 123 follower increase, while LinkedIn's follower count increased by over 50%. Since January, our average number of likes on Instagram has gone up. This is most likely due to a change in social media tactics. Our original social media plan included having general body meeting (GBM) reminders. We decided to limit our GBM reminders and instead post reminders for special events such as our alumni event. Additionally, we posted a greater number of picture updates and showcased our numerous outreach events. Our three highest performing posts on Instagram depict next year's all women leadership with 114 likes, our Stem Rotor Day Booth with 86 likes, and our Team Story with 80 likes.

Industry Interviews

We interviewed 5 new Industry Professionals this year and connected with 2 Alumni in the Fall. One of these interviews was a PSU CWC alumnus. We had a median of 17 people in attendance according to responses in our survey (Figure 7). This is about 50% of the people who responded to our survey. The purpose of our industry connections was to provide the team with relevant wind-related information and also interest members in pursuing a career in the Wind Sector. To showcase the diversity of career paths in the field, we had at least one professional from each sector of the industry: Communications, Off-Shore Wind, Project Development, and Turbine Design. While these connections have not (yet) resulted in job offers, our Industry Connections have helped give our team members a path towards internships. In addition, one of our Industry contacts has given us sponsorship from her company. Another connection has signaled that he will be opening a role in his company under him within the next year or two and would highly consider Penn State students if they were to apply.

In addition to these interviews, the team also held meetings with prior contacts from Invenergy as well as Innergex to learn more about offshore wind project development and asset management. These conversations, as well as the industry interviews with Atlantic Shores/Shell and Northland Power helped the team in better understanding the project development task. The team also met with 10 former PSU CWC and WEC alumni to present the current year's work and get their feedback and to stay in touch.

Outreach Events

A major goal this year was to increase our member retention by boosting comradery and outreach by engaging with our local community to increase their knowledge about wind energy. To accomplish this, we hosted six club socials and six outreach events.

We hosted an Ultimate Frisbee game, a Hike, Ice Skating, Cookie Decorating, Leads Dinner, and a multi-club Formal Dance. For each social event, we averaged 15 members. Our highest attendance at our event was our end of the year cookie decorating social with 25 members. Also included is our multi-club formal which had 550 people in attendance and about 16 wind energy members.

For our outreach events, we have participated in the PA KidWind Challenge, PA Solar Challenge, hosted a table at STEM Rotor Day and EarthFest, and organized our very own Sustainability Day Event and CWC Alumni Event. Our attendance results are summarized in Figure 8 and below.

Our Sustainability Day was a WEC outreach event connecting our college community to the local town. The event featured various activities centered around sustainability, such as solar, wind, and hydropower and included wind tunnel tours and materials describing careers in renewables. We had about 20 community members including kids and parents and 25 Penn State students (members and non-members) in attendance. Our alumni event had 25 students and 10 alumni in attendance.

Our highest performing outreach was our booths at Stem Rotor Day Event (around 200 people) and EarthFest (164 people). At these events, our club members outreached through Wind related activities and trivia. We also hosted KidWind and PA Solar at Penn State. Respectively, each event had 107 and 72 people in attendance. We also had 7 and 3 Penn State Student Volunteers respectively. Our goal was to introduce and teach sustainability to our community. Not only did we have high outcomes and great

engagement, due to our outreach we had students and community members interested in our club/club events for the next school year. Members of the local community who came to our club's Sustainability Day Event were excited to come back out next year. At KidWind and PA Solar, team members volunteered in running the event and a table was set up showcasing our club. Many K-12 students expressed interest in our progress. At STEM Rotor Day, we had an wind weightlifting challenge set up, which was also very popular with community members. This has taught us that our outreach events make a difference in teaching others about Wind Energy and Sustainability.

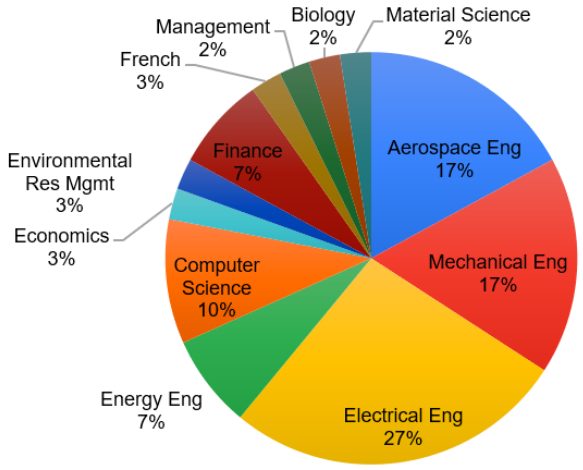

Figure 1. Percentage of Major

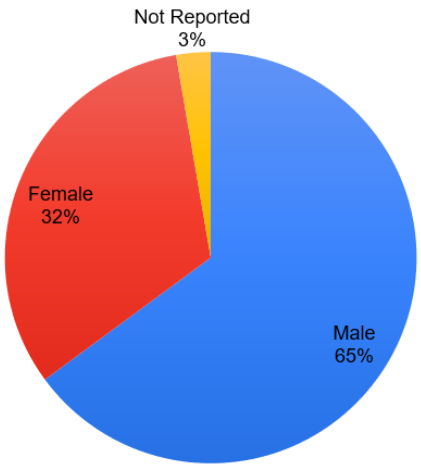

Figure 2. Percentage of Gender Identities

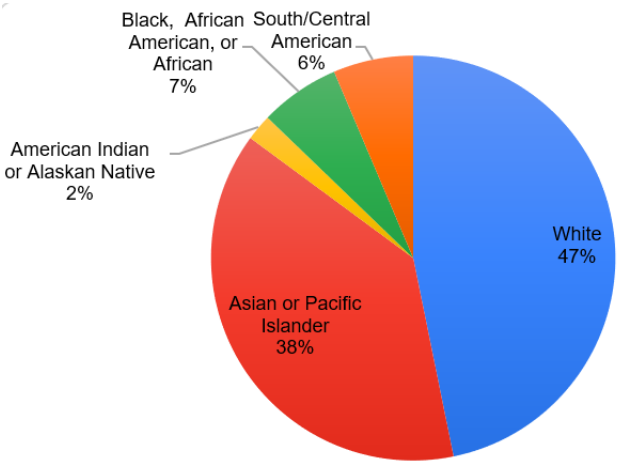

Figure 3. Percentage of Ethnic Background

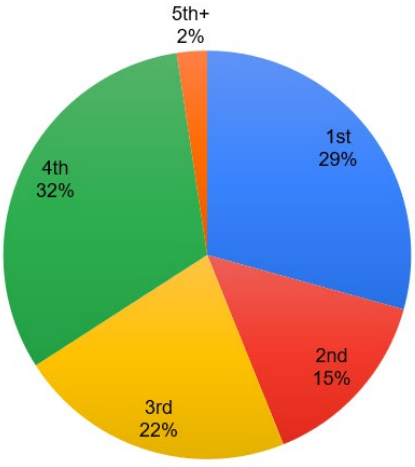

Figure 4. Percentage of School Year

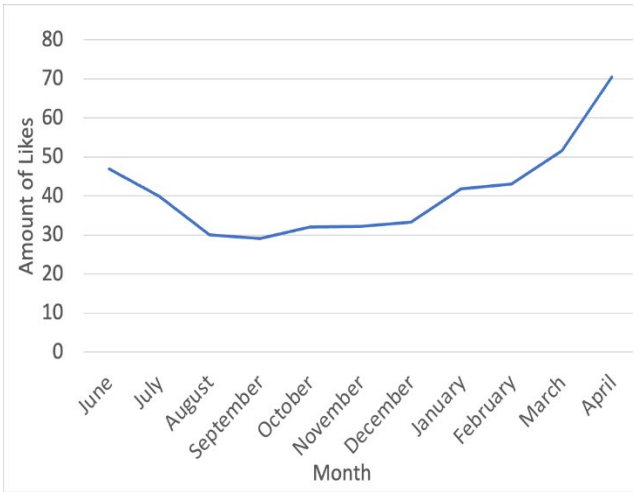

Figure 5. Average Number of Likes per Month on Instagram

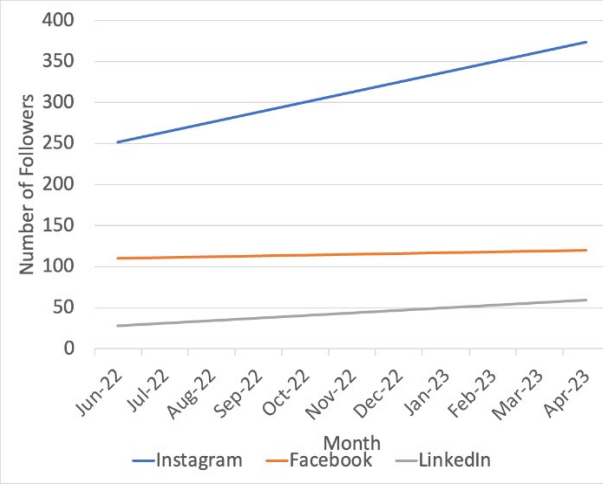

Figure 6. Followers Count on Instagram, Facebook, and LinkedIn from June 2022- April 2023

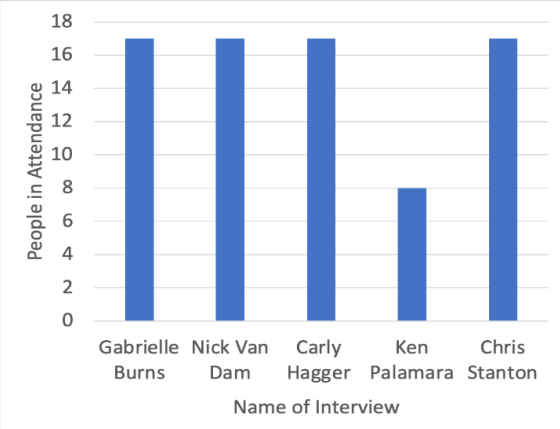

Figure 7. Attendance of Industry Interviews

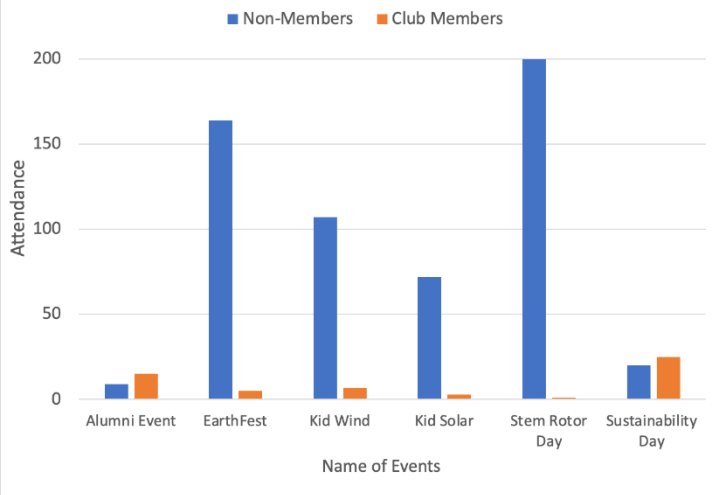

Figure 8. Attendance of Outreach Events by Non-Members and Club-Members