Iowa Western Community College
Written Testimony for US Senate Agriculture Committee
Energy and Rural Development Subcommittee Hearing
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Matthew Mancuso, Dean of Industrial Technology

Thank you Senator Joni Ernst and the Senate Agriculture Committee for inviting Iowa Western to discuss the programming we offer at Iowa Western and the positive workforce impact graduates have on the renewable energy industry. The mission of the college includes meeting educational needs and improving the quality of life through programs, partnerships, and community involvement throughout Southwest Iowa and we believe that the Renewable Energy programs achieves this mission. The renewable energy industry is one of the fastest growing industries and it has made a positive economic impact on communities.

Iowa Western Community College

Iowa Western Community College is the sole provider of higher education in southwest Iowa which serves a seven-county, predominantly rural, 4,309 square mile district with a total population of 169,566[i] Iowa Western's main campus is located in Council Bluffs, IA, which is a part of the Omaha, NE metropolitan statistical area. Iowa Western also has four center locations in Atlantic (Cass County Center), Harlan (Shelby County Center), Clarinda (Clarinda/Page County Center) and Shenandoah (Page/Fremont County Center) to serve its rural communities. The main campus and four rural centers serve 5,997 [ii]students through access to over 90 majors that culminate in certificates, diplomas and associate degrees. Iowa Western serves an increasing number of Pell-eligible (69%), and first-generation (61%) students. Iowa Western provides crucial access to education which results in employment opportunities. Education can be in credit certificates (1 semester), diplomas (2 semesters), AAS degrees (2 years) or in non-credit short-term training.

Renewable Energy Programming

Iowa Western first offered its first renewable energy program in 2009, since then it has been through two major curriculum redevelopments. The curriculum changes were made to ensure we stay current with the local workforce needs. The current curriculum is one of the premier program pathways for renewable energy in our region. Iowa Western offers a Renewable Energy AAS, Wind Turbine Technician Diploma, and a Solar Certificate. In addition to these credit programs, Iowa Western also offers a non-credit solar certificate program. These program offerings work in alignment with each other to provide multiple pathway options for students in the renewable energy field. This purposeful alignment allows for students to enter the workforce and return to further their education seamlessly.

The Renewable Energy Associate of Applied Science[iii] is two year 67-credit hour program. The program is designed to provide the skills and knowledge required for entry-level careers in the installation and maintenance of renewable energy systems in both wind and solar industries. The first-year students learn the skills of a wind turbine technician, and then in the second year the students learn solar and then receive 12 additional credit hours in Management, English, and Social Science classes. Graduates of this program often work as wind turbine technicians or solar installation technicians for local companies.

The Wind Turbine Technician Diploma [iv]is a two semester 36 credit hour program. Students take only the first-year courses of the Renewable Energy AAS program, and then they go straight into industry instead of continuing their education. This program prepares students to climb and inspect the exterior and physical integrity of wind turbine towers. Students will learn routine maintenance on wind turbines; test and troubleshoot electrical, mechanical, and hydraulic systems.

The Solar Certificate [v]is a one semester 6-hour credit hour program. This program consists of two courses, which are also included in the second year of the Renewable Energy, AAS degree. One of the courses focuses on solar photovoltaic, and one on solar thermal and geothermal. Students in the Electrical Diploma program also take the photovoltaic, which increases the knowledge of this growing energy. HVAC students take the solar thermal class to understand thermal energy and geothermal principles. In the curriculum, Iowa Western students will take the North American Board of Certified Energy Practitioners. (NABCEP) certifications. This NABCEP certificate is an industry recognized certificate, which enhances our students' credentials for the workforce.

Iowa Western Renewable Energy Program Overview

Over the last five years, Iowa Western average enrollment of the Renewable Energy program was 16 full time students and 6 part time students per year. In that same time frame, the Renewable Energy program awarded 81 awards to those students

Last year, Iowa Western redeveloped their curriculum to be more attractive to students and increase enrollment. In addition, we expanded renewable energy coursework to students from other programs. In addition to the Renewable Energy students, this year we had 16 HVAC/R students and 19 Electrical students also taking courses in renewable energy coursework that are pertinent to their career field.

Local Workforce and Economic Impacts

Wind energy has a large economic impact for the state and for rural communities. In Iowa, there are over 5,590 wind turbines that produces over 34,139.4239 thousand megawatt hours in 2020[vi]. In Iowa Western's service area there are wind farms in Walnut, IA, Adair, IA and Shenandoah, IA. There is also a wind farm just approved for construction in Page County. Wind energy equates to 34% of Iowa's total energy production, which is the highest percentage in the nation. In 2018, there were over 10,000 Iowans directly employed in the wind energy, with the majority of them employed in operations and maintenance. Besides direct employment, there is land lease payments to the land owners, which are usually farmers, and that equated to 30 million dollars in 2020[vii]. The increase of local tax revenue from the property taxes of the wind turbines also assists with rural community development. Many rural communities that have wind farms located nearby have experienced an increase demand for housing, and local businesses see an increase in patronage from workers of this wind farm. In Walnut, IA I have witnessed workers from the

local wind farm patronage a local diner daily, which has helped that small business become more successful.

Wind technician workforce demand is high, and is growing. In Iowa, it is expected to grow by 26.9% by 2025[viii]. Students who are seeking jobs as wind technicians and graduate from the Wind Turbine Technician Diploma or the Renewable Energy AAS are quickly hired. On a weekly basis we receive notice of job opportunities from companies nationwide to recruit our students as wind technicians. Majority of the students start their careers in working in local wind farms in rural Iowa. Other students start their careers in Iowa, South Dakota, Minnesota and throughout the Midwest. After a few years, many students return to Iowa to work on the local wind farms in the communities that they are from.

Solar energy is a relatively newer renewable energy to the Midwest and to Iowa. The increased quality and the decreased pricing of solar panels have made this one of the fastest growing renewable energy in Iowa. Jobs have increased by 268% in the last decade in Iowa. Students graduating with the Solar Installation Certificate or even just taking our courses would be prepared to enter into a solar career. Solar installation is usually a part of another industry and not a standalone industry. As an example, students will work for an electrician as a solar installation technician. Many workers will also work as an electrician. This is why in the most recent curriculum change the electrical and HVAC students are taking the solar courses as this will continue to merge in their industry. We also have had a few larger construction companies hire a few of our graduates, for installation of solar fields. We expect that to grow in the future.

In closing, Iowa Western is interested in continuing to support and enhance renewable energy and rural communities. Iowa Western is committed to the success of the renewable energy industry by preparing educated students to meet the workforce demand. These students are passionate about renewable energy and many are interested in living and working in rural communities. I thank you for your time and look forward to your questions.

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[i] United States Census Bureau. June 17, 2021, https://www.census.gov/data.html

[ii] National Center for Education Statistics. June 17, 2021. https://nces.ed.gov/globallocator/index.asp?search=1&State=IA&city=&zipcode=&miles=&itemname=Iowa+Western&sortby=name&School=1&PrivSchool=1&College=1&CS=CD863D28

[iii] IW Renewable Energy Technology, A.A.S. June 17, 2021, https://www.iwcc.edu/academic_programs/industrial-technology/renewable-energy-technology-a-a-s/

[iv] IW Wind Turbine Technician Diploma. June 17, 2021, https://www.iwcc.edu/academic_programs/industrial-technology/wind-turbine-technician/

[v] IWCC Solar Installation Technician. June 17th, 2021, https://www.iwcc.edu/academic_programs/industrial-technology/solar-installation-technician/

[vi] Wind Energy in Iowa. June 18th, 2021, https://windexchange.energy.gov/states/ia#turbine

[vii] 2020 Iowa Energy Fact Sheet. June 18th, 2021, https://www.iaenvironment.org/webres/File/2020%20Iowa%20Wind%20Energy%20Fact%20Sheet.pdf

[viii] Economic Modeling Database. June 18th 2021.