SOLAR ON SCHOOLS

CASE STUDY: Elkhorn Area High School Agriculture Greenhouse

Project Summary

Students can make solar energy a reality at schools. In September of 2020, Elkhorn Area High School senior, Shannon Wulf, met with high school agriculture teacher, David Kruse to discuss project ideas related to her Supervised Agriculture Experience (SAE) for her agriculture course.

Although that meeting had modest goals of adding one or two panels to help power some pumps for the greenhouse hydroponic systems, it ultimately became the starting point for a one and a half year project where Shannon served as a key facilitator in helping to establish a 10.2 kilowatt ground solar array to support the EAHS greenhouse building.

Wulf worked with professionals from Adams Power and the Elkhorn Area School district to develop a proposal for a 9.9 kW ground array system that she presented to the Elkhorn Area School Board in April of 2021. Ms. Wulf also served as a key author for the grants which ultimately resulted in helping secure school district project approval. After some slight design adjustments resulting in the addition of one additional solar panel, a 10.2 kW ground solar array system was installed in the fall of 2021 and became active November 4, 2021. Five Elkhorn Area High School students had the opportunity to assist hands-on in the early stages of installing the array's framework.

> *"Educationally, the ground solar array serves as a 'field trip' resource for the agricultural education classes with units related to renewable energy."*
>
> **David Kruse, Agricultural Sciences Instructor**

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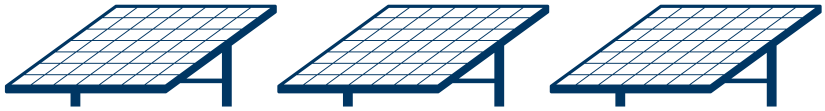
Students visit with a community group to discuss their topic, "Is Solar Energy a Viable Electricity Alternative for the Agriculture Industry?"

SYSTEM AT A GLANCE:

- **Commissioned: November 2021**
- **System Size: 10.2 kW DC**
- **Year 1 Performance: 14,622 kWh**
- **Solar Installer: Adams Electric**
- **Total Billed System Cost: $18,240**
- **Cash, Grants, Rebates, Incentives: $8,493 (Focus on Energy)**
- **Average Annual Savings $1,604.07***

**Indicates annual projections*

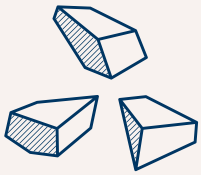


Environmental Benefits

In the first year the 10.2 kW DC system will offset CO2 emissions equivalent to:

2 homes' electricity use for one year

25,792 miles driven by an average passenger vehicle



11,496 pounds of coal burned

Source: EPA Greenhouse Gas Equivalencies Calculator

Educational Connections

The project also developed into an FFA contest for Elkhorn FFA members. They formed an Ag Issues Forum team which required them to visit community groups to discuss the topic “Is Solar Energy a Viable Electricity Alternative for the Ag Industry?” The team was the WI FFA winner in 2021, and advanced to national FFA competition in the fall of 2021.

Learn more & find more resources at: www.midwestrenew.org/solar-on-schools

Excess electricity production from the solar array also supports the electricity needs of the primary high school building. Educationally, the ground solar array serves as a resource for classes with units related to renewable energy.