CASE STUDY

Dane County Government Goes 100% Renewable Energy with 90-Acre Solar Farm

Dane County partners with SunVest and Alliant Energy to become the 4th county in the country to achieve this goal.

To celebrate Earth Week 2023, Dane County Executive Joe Parisi joined Alliant Energy and SunVest Solar representatives at the newly constructed Yahara Solar Project. The event highlighted Dane County becoming the 4th County in the U.S. to reach the milestone of using 100% renewable electricity at all county facilities.

SunVest designed and developed the 90-acre solar farm site on county-owned land in the Town of Cottage Grove, a suburb east of Madison. This project will reduce climate-changing greenhouse gas emissions equivalent to taking 5,000 cars off the road. Dane County is a member of the U.S. EPA's Green Power Partnership program that tracks the renewable energy progress of hundreds of municipalities.

The 17-megawatt solar project will produce more than 36 million kilowatt-hours of renewable electricity annually to power more than 3,000 Dane County homes. The 33,000 solar panel array utilizes bifacial modules producing a staggering 650 watts. The panels produce energy from both sides of the panel, increasing energy production as sunlight reflects off the ground, even when covered in snow! ATI DuraTrack HZ trackers follow the sun throughout the day to maximize production.

SUMMARY

The 17-megawatt Yahara Solar Project is Dane County's largest renewable energy project to date. After the array reached mechanical completion in April 2023, Dane County became the first in Wisconsin to be powered by 100% renewable offset electricity. The Yahara Solar Project was completed with partners Alliant Energy, SunVest Solar, and Pieper Electric.

SOLUTION

90-acre ground mount array designed by SunVest Solar LLC

- 17 MW AC
- 33,000 Canadian Solar bifacial 650 and 655w modules

BENEFITS

- Dane County now uses 100% renewable offset electricity at all county facilities.

- Enough power to serve 3,000 Dane County homes.

- GHG reduction equivalent to taking 5,000 cars off the road.

- Reduces water runoff volume by about 325,000 cubic feet and reduces phosphorus runoff to area waterways by 370 pounds annually, compared to row crop production.

- Not tilling the land will boost pollinator populations and sequester 72 tons of carbon.

- Achieving the 100% renewable electricity goal will reduce Dane County's GHG emissions by 63% annually compared to 2020.

- After producing energy for 25+ years, the site will be restored back to agriculture land.

The Yahara Solar Project is the Dane County government's largest renewable project, nearly double the size of the solar installation at the Dane County Regional Airport – a 9-MWac project that began operation in December 2020. This project and the Yahara solar farm join the 15 other solar projects that generate power for Dane County.

"The Yahara Solar Project, and all of our renewable energy projects across our footprint, diversify energy generation on the grid so it more reliably delivers energy when our customers need it most," said JP Brummond, Vice President of Customer and Community Engagement for Alliant Energy.

Alliant Energy selected SunVest Solar – headquartered in nearby Pewaukee, Wisconsin – to build, operate, and initially own the project. The Yahara Solar Project construction began in June of 2022 and was ready to generate power roughly a year later. Pieper Electric – headquartered in New Berlin, Wisconsin – was the installation contractor working with multiple local trade unions.

"Dane County is advancing clean energy and leading by example. We look to inspiring other municipalities nationwide to follow suit," said Kirk Kindred, President of Business Development at SunVest Solar.

Alliant Energy will deliver the power to its customers, and Dane County will receive renewable energy credits (RECs) in return for leasing the land to the project. Under an innovative deal structure, the project company leases the land from the County and makes payments in renewable energy credits (RECs). This arrangement allows the County to reach its renewable energy goals for decades without increasing energy costs.

The RECs will offset the County's greenhouse gas emissions, helping it achieve its goal of 100% renewable electricity two years ahead of schedule. The project also contributes to the County's broader goal of cutting countywide emissions in half by 2030 under its Climate Action Plan.

The solar farm's construction relied on the skilled work and craftsmanship of local union-operating engineers, carpenters, laborers, and electricians. The solar project created approximately 70 jobs during peak construction.

Converting over 90 acres of land used for row crop production will produce other environmental benefits. For example, the project will:

- Cut water runoff volume by about 325,000 cubic feet (equivalent to roughly 3.5 Olympic-sized swimming pools).
- Reduce phosphorus runoff to area waterways by 370 pounds annually.
- Sequester 72 tons of carbon in the soil annually (the equivalent of 8,000 gallons of gasoline).
- Provide habitat and refuge for a variety of pollinating insects as a result of pollinator-friendly plantings throughout the site, helping improve biodiversity in the region.

Achieving the initial 100% renewable electricity goal will reduce the County's emissions by 63% or 24,500 metric tons of carbon dioxide equivalents annually compared to 2020.

The addition of the Yahara Solar Project to Dane County’s energy portfolio will enable the county to meet its sustainability goals while lowering the cost of operating government.