NUCOR SKYLINE

CASE STUDY

Wisconsin Power & Light Solar Project

Wisconsin

OVERVIEW

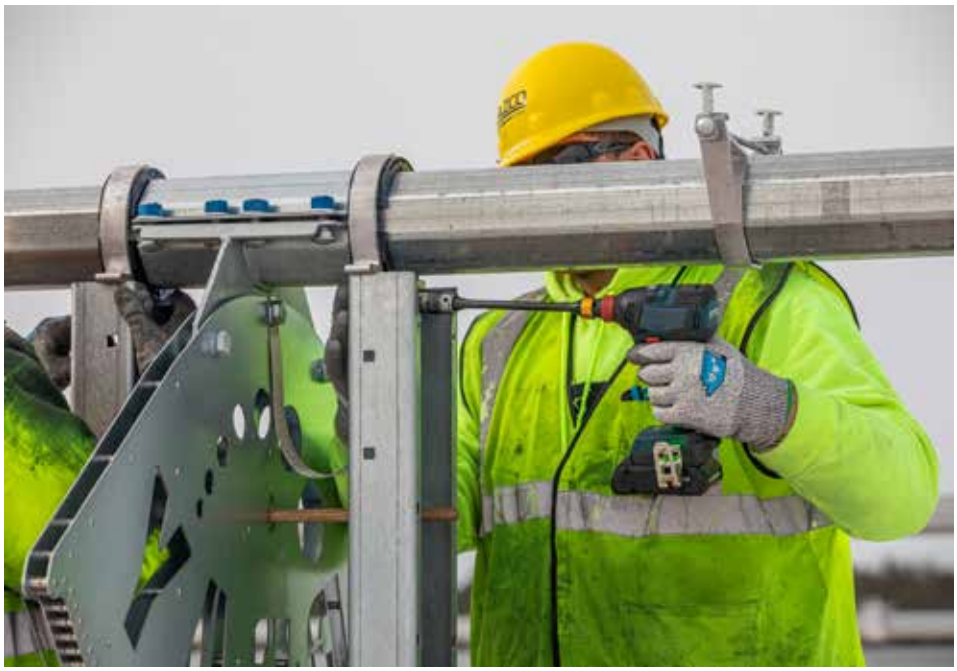
Nucor has always been ahead of the curve when it comes to innovations in the world of steel manufacturing. Being a part of a circular economy, minimizing waste and energy use, and reusing all materials is an important part of who we are. Nucor products are made with an average of 97% recycled content, with some products containing almost 100% recycled content.

For over 50 years, Nucor has been making steel using the electric arc furnace (EAF) that melts recycled scrap to produce high quality steel. EAFs are energy efficient, utilizing electricity instead of natural gas and coal, like traditional blast furnace steel making. They produce less emissions which is good for the planet.

Burns & McDonnell, based in Kansas City, KS, is an employee-owned venture established in 1898. For over 100 years, Burns & McDonnell has been working within the power, oil/gas, transportation, water, aviation, and federal arenas, helping clients build a better future.

Burns & McDonnell was contracted by Alliant Energy, in Madison, WI, to build 250 MW of solar energy projects in Wisconsin. This represents a more than 50 percent increase in the solar energy that Wisconsin is currently producing.

Founded in 1917 with more than 3,300 employees, Alliant Energy is focused on the future of energy in Wisconsin. With 975,000 electric and 420,000 natural gas customers, their focus is on serving customers and building strong communities. Alliant is working to achieve net-zero CO_2 emissions from the electricity they generate by 2050 and is committed to adding 1,089 MW of solar generated energy in Wisconsin by the end of 2023.



POWERFUL PARTNERSHIPS

Nucor, and many of its affiliates, have partnered with Burns & McDonnell going forward to create an even more environmentally friendly corporate culture.

The WPL Solar Project consists of a total of nine projects to bring ~650 MW of solar energy. The current project with Alliant, to bring an additional 250 MW of solar energy to Wisconsin consists of three sites for the initial contract, which include Bear Creek and North Rock (50 MW/ac, 64 MW/dc) and Wood County (150 MW/ac, 198 MW/dc). Burns & McDonnell will provide fully integrated EPC services for the program and self-perform the construction. They will provide conceptual and detailed electrical design, environmental studies and permitting, civil and structural design for the PV modules, substation, and gen-tie scopes.

The Bear Creek Solar project, located in Richland County, WI, will connect into the electrical transmission grid directly through the local substation. Civil engineering has been completed, and Nucor Skyline piles, which anchor the solar array structures to the ground, are being installed. The site is expected to begin generating power for thousands of homes by the end of 2022.

The North Rock Solar project, located in Rock County, WI, will also connect into the electrical grid though the local substation. The Nucor Skyline piles are currently being installed, with civil work, road construction and site grading complete.

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PROJECT PARTNERS

Owner: Alliant Energy – Madison, WI

Environmental, Engineering, and Construction: Burns & McDonnell – Kansas City, MO

PRODUCT

Wide Flange Beams: 42 different combinations of sizes and lengths including W6x8.5, W6x9, W6x10, W6x12, W6x15, W6x16, and W8x10 (7,359 tons for the first three projects)

PROJECT TIMELINE

April 2021 to present

The Wood County Solar project, the largest of the three current projects with Alliant Energy, is located in Wood County, WI. As with the other projects, this project will connect into the grid directly though the local substation and will generate enough clean, low-cost energy to power tens of thousands of homes.

The onsite civil work, such as creating access roads, retaining ponds, and site grading is nearly complete as construction continues. Piles and racking systems to support the solar panels are being installed. Seeding and vegetation growth is underway and making solid progress in promoting native plant growth and a pollinator habitat.

The three current projects with Alliant Energy required the use of more than 111,000 Nucor Skyline wide flange beams. These beams were manufactured in both the Nucor Steel Berkeley and Nucor-Yamato Steel facilities. In order to expedite this project, Nucor Skyline utilized 14 different processors and galvanizers. Once manufactured and galvanized, the piles were shipped to the project sites via trucks. At the peak of the project, five trucks per day were used to haul wide flange beams to the sites.

A fourth solar array foundation contract with Alliant Energy was just awarded to Burns & McDonnell and Nucor Skyline, and will get underway this year and run into early 2024. This project, located in Brownsville, Dodge County, WI will generate up to 100 MW of low-cost solar energy. Burns & McDonnell continues to partner with Nucor Skyline for the steel piling needs for this project which will use approximately 44,000 wide flange beams.

Burns & McDonnell has assisted Nucor with several projects and services at various facilities and mills throughout the United States, including environmental compliance and permitting, water assessment, civil design and implementation, and road design/construction. Such services have included helping existing Nucor facilities and team members with ongoing compliance activities in consideration of facility improvements, as well as engagement with initial construction needs for Nucor's new and proposed mills located in Missouri, Florida and Kentucky.

Specifically, Burns & McDonnell worked closely with Nucor to develop conceptual, preliminary and final design plans for the overall site layout, rough grading and site access for barge, rail and roadways for the new steel mill in Brandenburg, KY. This new $1.7 billion Nucor facility will be one of only a few mills in the world capable of supporting the offshore wind market's towers and foundations. Burns & McDonnell team members also performed various environmental services for the new mill, including environmental permitting, wetland assessment and archeological studies.

Although the current, overall support to Nucor from Burns & McDonnell has included team member involvement from several global practice areas, such as environmental, water and transportation, their assistance continues to expand to address other specific needs of Nucor with respect to energy, sustainability, transmission/distribution and construction.