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## Kansas, Washington Take Aim at Wind Turbine Lights

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## Join IIR for a Webinar on the Global Chemical Processing Outlook

Industrial Info is pleased to be presenting a complimentary webinar on the outlook for the global Chemical Processing Industry on Wednesday, May 10, at 10 a.m. CDT (11 a.m. EDT).

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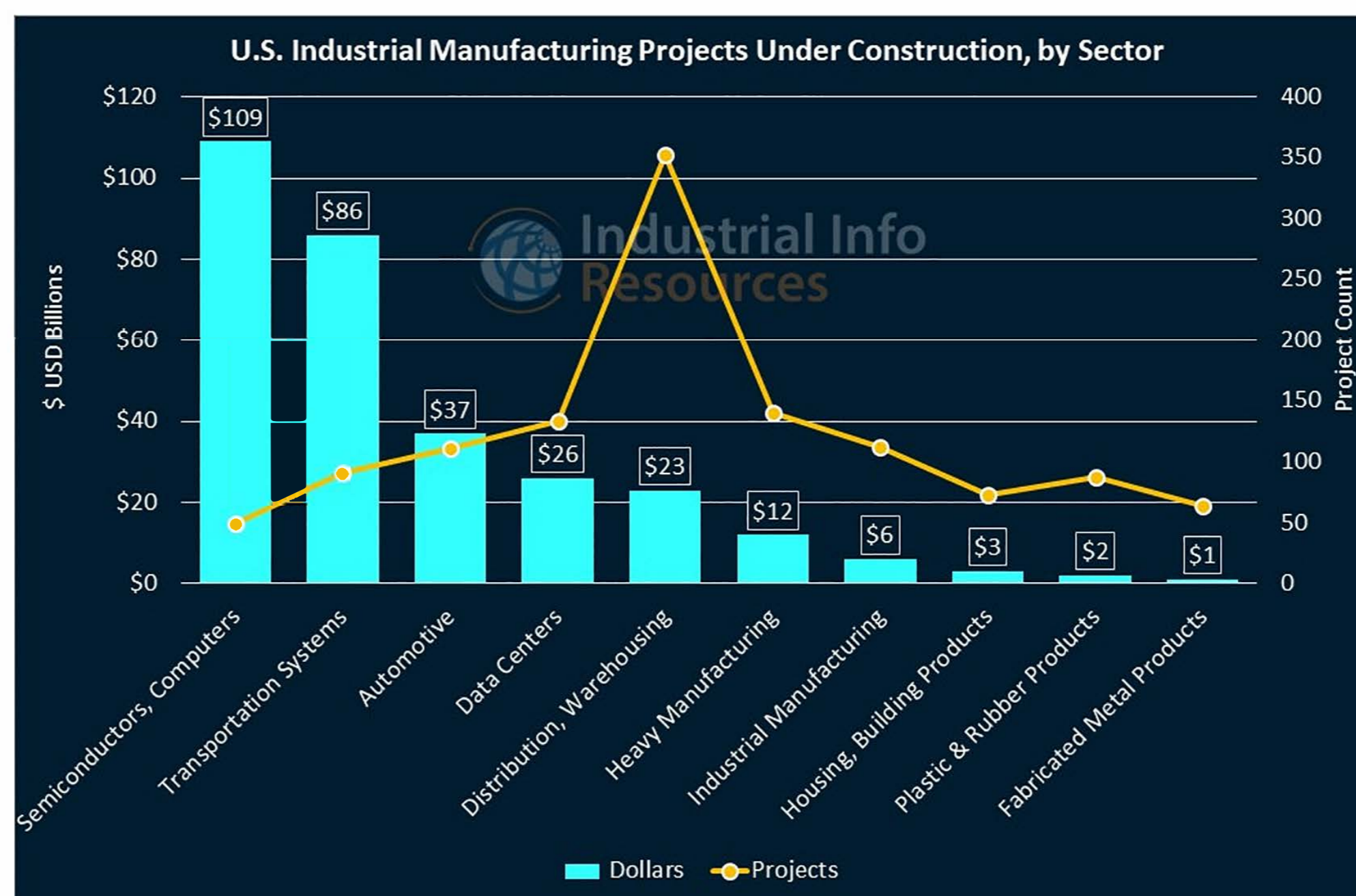
## North America Industrial Project Spending Up 26.5% in February Year-over-Year

Industrial Info's North American Industrial Project Spending Index shows project spending in February increased 26.5% year-over-year, continuing a positive trend that began in January 2021.

Covering the U.S., Canada and Mexico, the Project Spending Index is a monthly indicator that compares active spending rates with the same month in the previous year to get a measure of growth or contraction in the industrial market. The index provides spending details by industry and market region.

For February, all but three of the 12 industries tracked by Industrial Info posted year-over-year increases in active project spending. The Industrial Manufacturing Industry saw the largest gain, jumping nearly 57.4% and totaling \$285.6 billion.

Industrial Info is tracking more than 1,200 active capital Industrial Manufacturing projects in the U.S. that are under construction. Seven of the top projects in terms of spending involve the fabrication of semiconductor chips, as the nation pumps billions of dollars into home-grown chip manufacturing plants. Signed into law on August 9, 2022, the U.S. CHIPS and Science Act provided about \$280 billion to boost domestic research and manufacturing of semiconductors.



The largest investment under construction is Intel Corporation's (NASDAQ:INTC) (Santa Clara, California) **\$30 billion Ocotillo Semiconductor Manufacturing Plant Expansion in Chandler, Arizona**. The project involves the construction of two new semiconductor manufacturing plants, totaling 670,000 square feet, bringing the total number of plants at the site to six. Subscribers to Industrial Info's Global Market Intelligence (GMI) Industrial Manufacturing Project Database can [click here](#) for the project report.

Prior to the advancement of semiconductor- and computer-related projects in the U.S., the transportation systems sector held the top place in terms of investments. One of those under construction is the California High-Speed Rail Authority's **\$25 billion High-Speed Rail System CP 1 Segment**. As part of a \$38 billion project, the CP 1 Segment includes construction of 32 miles of track from Madera County to Fresno County. Subscribers can [click here](#) for the project report.

Automotive projects also figure high on the list. In Ellabelle, Georgia, Hyundai Motor Company's (Seoul, South Korea) **\$5.5 billion grassroots electric vehicle and battery assembly plant** is planned for completion in the first quarter of 2025. The plant will produce as many as 300,000 vehicles per year as the automotive industry pivots to all-electric cars and trucks. Subscribers can [click here](#) for the project report.

Other industries that posted strong year-over-year gains in February included Oil & Gas Production (rising 51.63% to \$147.9 billion) and Food & Beverage (rising 37.5% to \$57.7 billion).

### Construction Start Values are Down

Meanwhile, North American Construction Starts totaled \$64.7 billion in February, down 22.3% from February 2022. Seven of the 12 industries tracked by Industrial Info reported drops in spending. According to the latest quarterly survey by the National Association of Manufacturers (NAM), respondents anticipate an increase of 1.8% in capital spending over the next 12 months, lower than 2.3% in fourth-quarter 2022--and the lowest rate since May 2020.

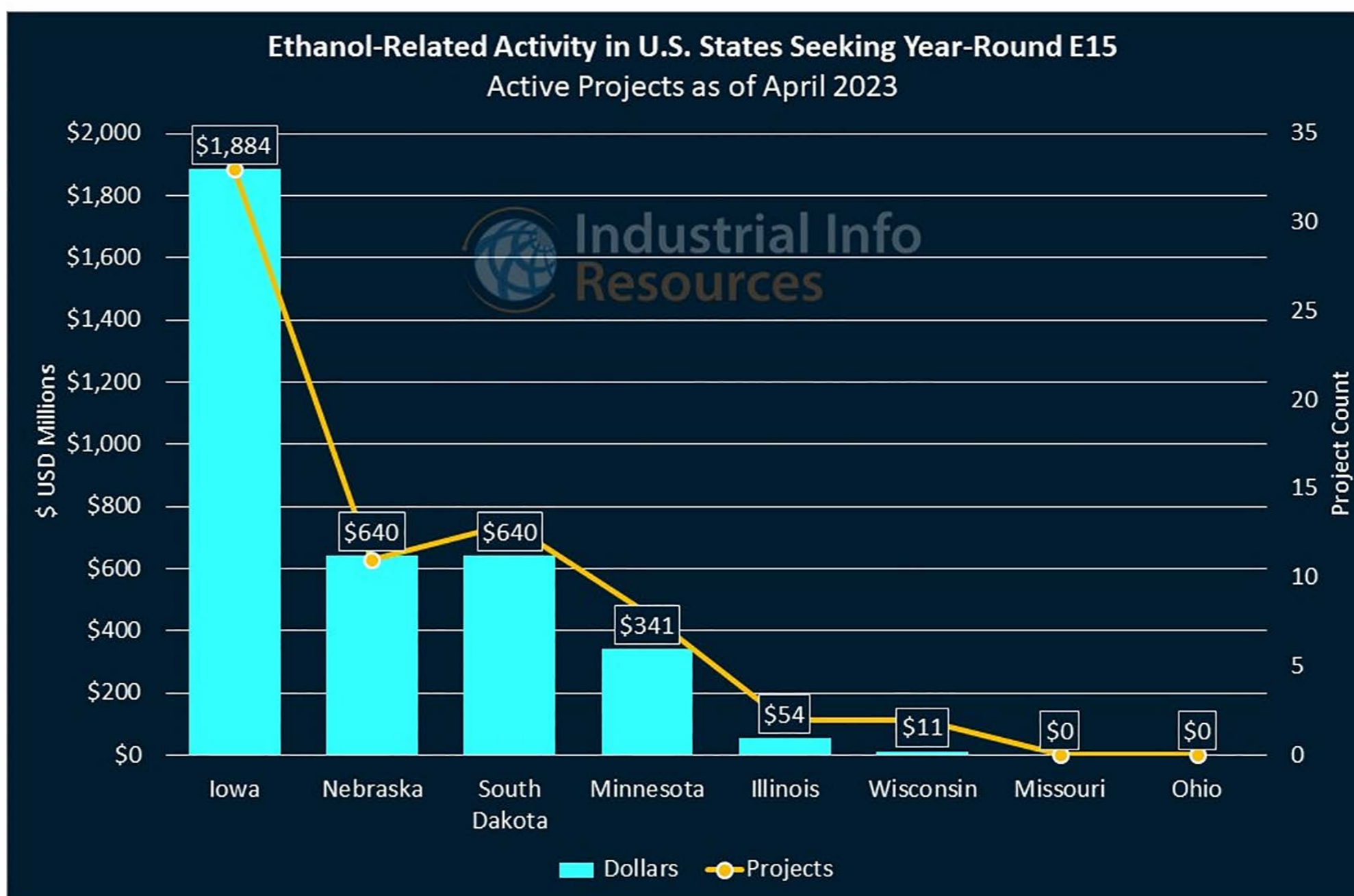
Subscribers can [click here](#) for all projects cited in this article and [click here](#) for the related plant profiles.



## EPA's Ethanol Decision Could be Profitable for Corn-Heavy States

The Biden administration is renewing efforts to allow year-round sales of higher-ethanol fuel in eight states across the central U.S., all of which feature corn as a significant ingredient in their agricultural economies. The governors of Illinois, Iowa, Minnesota, Missouri, Nebraska, Ohio, South Dakota and Wisconsin have been pushing the U.S. Environmental Protection Agency (EPA) to lift a long-standing ban on summertime sales of E15 gasoline, which is 15% ethanol. Industrial Info is tracking about more than \$3.3 billion worth of active ethanol-related projects across these eight states.

The EPA's proposal, which is widely viewed as a means to reduce gasoline prices (albeit marginally) and bolster the economies of "breadbasket" states, likely would take effect in the summer of 2024. Historically, the agency has banned summer sales of E15 because it once was believed to be a bigger contributor to smog than E10 (which contains 10% ethanol) and other alternative fuels.

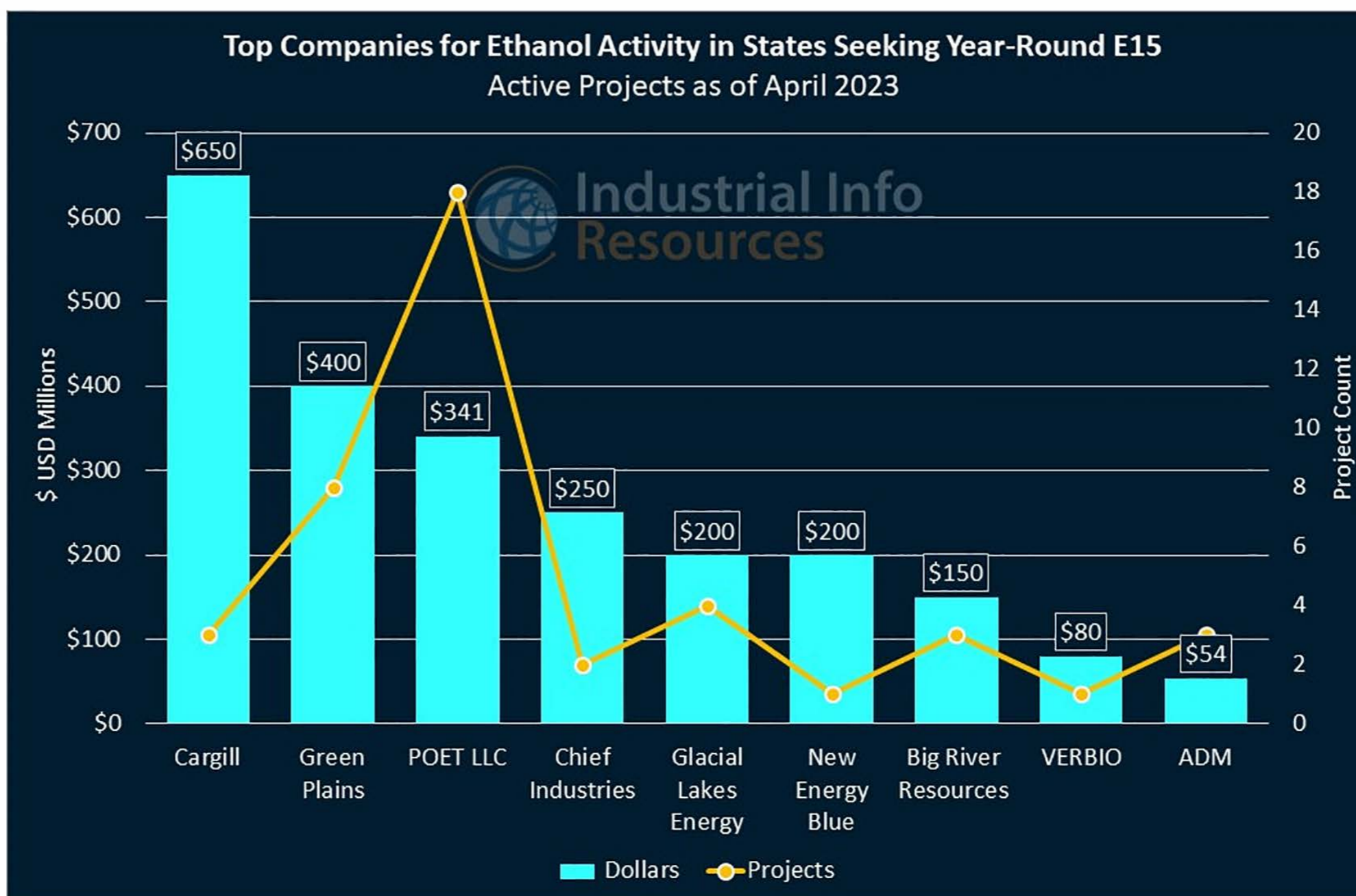


Years of research, however, have proven E15's smog-creating capability to be no worse than that of E10. (Normally, the EPA maintains seasonal restrictions on the evaporation potential of gasoline, which contributes to emissions. Some U.S. states, such as California, have even tighter standards.)

"[The] EPA's research has shown no significant impact on evaporative emissions when the 1.0-psi waiver [normally for fuels with 10% ethanol] is extended to E15," the agency said in May 2022, after the change was initially proposed. "With no significant impacts on emissions from cars and trucks, we expect consumers can continue to use E15 without concern that its use in the summer will impact air quality."

Iowa, often seen as the capital of the U.S. ethanol market, leads the eight states in ethanol-related investments, with about \$1.9 billion in active projects. These include three from Cargill Incorporated (Minnetonka, Minnesota), which leads all other parent companies in investments across these eight states. Cargill began construction on a \$300 million expansion at its corn milling and ethanol plant in Eddyville in November 2021 and a \$50 million expansion at its ethanol plant in Fort Dodge in August, and it is considering a butanediol-production unit addition at the Eddyville site.

Subscribers to Industrial Info's Global Market Intelligence (GMI) Project Database can read detailed reports on the Eddyville and Fort Dodge expansions, and the proposed butanediol unit at Eddyville.



Ethanol producers have at least one thing in common with fossil-fuel giants: Many are turning to carbon capture and sequestration (CCS) projects to negate emissions from their facilities. Green Plains Incorporated (NASDAQ:GPPE) (Omaha, Nebraska), one of the three largest ethanol producers in North America, is investing heavily in these projects across Nebraska; it is seeking permits for CCS unit additions at its plants in Atkinson, Wood River and York, Nebraska, which could begin construction as early as next year. Subscribers can read detailed reports on the proposed CCS units in Atkinson, Wood River and York.

Two smaller expansion projects in the Midwest are expected to wrap up later this year: VERBIO Vereinigte BioEnergie AG's (Leipzig, Germany) \$80 million ethanol unit addition at its renewable natural gas (RNG) plant in Nevada, Iowa, and Archer Daniels Midland Company's (NYSE:ADM) (Chicago, Illinois) \$40 million expansion of its wet corn mill and ethanol production plant in Marshall, Minnesota. Subscribers can learn more from Industrial Info's reports on the Iowa and Minnesota projects.

Still, E15 has ways to go before it is embraced widely by U.S. consumers. According to the U.S. Department of Energy, just more than 2,500 gas stations in 31 states offer E15, and a long list of commonly used vehicles are prohibited from using the fuel: motorcycles; all vehicles with heavy-duty engines, such as school buses and delivery trucks; off-road vehicles, such as boats and snowmobiles; and anything with an engine made before 2001.

And the financial benefit for drivers using E15 instead of other blends—a refrain commonly heard from politicians in both major U.S. parties—often is negligible. President Joe Biden suspended the rule in the summer of 2022, when gasoline prices were battering consumers' pocketbooks; although market factors gradually reduced prices in the months to come, E15 is not believed to have had any meaningful effect. For more information, see April 15, 2022, article - [Could Summer E15 Gasoline Waiver Impact Ethanol Plant Turnarounds?](#)

The Trump administration also allowed E15 to be sold during the summers of 2019-21, but only a tiny amount ended up in drivers' tanks. In any case, the U.S. Court of Appeals for the District of Columbia Circuit ruled in 2021 that Trump's EPA had overstepped its authority in allowing the sales. The Biden administration aims to avoid this barrier by using an emergency waiver, citing a difficult market for global fuels caused by the war in Ukraine.

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## Kansas, Washington Take Aim at Wind Turbine Lights

As wind turbines become increasingly common sights on the global landscape, concerns have emerged about their impact on wildlife and human health. One issue that has arisen is light pollution. Light abatement or mitigation has become an important concern for the wind industry, as it seeks to address these concerns and reduce its impact on the environment and communities. In some cases, this is being driven by legislation. In April, a bill in Washington state for light mitigation of wind turbines was on its way to the governor after passing through the state's Senate and House, while in Kansas, the governor signed a bill requiring developers to install light mitigation technology on new and existing windfarms if approved by the U.S. Federal Aviation Administration (FAA).

Light pollution from wind turbines typically takes two forms: blade flicker and nighttime lighting. Blade flicker occurs when the rotating blades of the turbine pass in front of the sun, creating a strobe-like effect that can be disorienting and dangerous for wildlife and people. Nighttime lighting makes the turbines visible to aircraft but can also cause disturbance to local communities and disrupt natural ecosystems. The bills in both Kansas and Washington take aim at the use of nighttime lighting.

To address these concerns, wind turbine manufacturers have developed a range of light abatement technologies that aim to reduce the impact of turbine lighting on the environment and communities. One approach is to use sensors and computer systems to automatically adjust the lighting of the turbines based on ambient light conditions, minimizing their impact while maintaining visibility for safety. This approach is known as adaptive lighting and has been implemented on some wind turbines.

Another approach is to use specialized lighting that is less intrusive and less harmful to wildlife. This can include amber-colored lighting that is less attractive to insects and other nocturnal wildlife, as well as low-intensity lighting that is less disruptive to nearby communities. Such lighting solutions have been found to be effective in reducing the negative impacts of nighttime lighting on the environment.

The Kansas and Washington bills are geared toward installing aircraft detection lighting systems that rely on radar to turn the lights on if an aircraft is detected and turn them off after it has passed.

At the time of writing, the light mitigation bill was on Washington Governor Jay Inslee's (D) desk to be signed into law. If he does so, the law would take effect for new windfarms with five or more turbines in July, while older windfarms must install the lighting systems by 2028.

If the bill becomes law, examples of projects that could be affected by the new legislation include [Scout Clean Energy LLC's](#) (Boulder, Colorado) Horse Heaven wind project. As planned, the windfarm would include 248 turbines to achieve a nameplate generating capacity of 350 megawatts (MW). Construction is set to begin in 2024 and expected to begin completed by the end of the year. Subscribers to Industrial Info's Global Market Intelligence (GMI) Power Project Database can [click here](#) for the full report.

The U.S. Midwest is a hotspot for windfarms, and Kansas boasts no less than 4,000 turbines in operation, according to regional news media. Kansas Governor Laura Kelly (D) signed the Kansas turbine lighting-mitigation bill into law in mid-April. The law requires that starting July 1, developers of windfarms with at least five turbines must apply to the FAA for approval to use a mitigation technology that complies with the agency's regulations. If approved, they would have 24 months to install it.

The law functions a bit differently for the state's operational windfarms. Starting July 1, 2026, windfarm owners and operators must apply to the FAA within six months of signing a new power offtake agreement. Because this could potentially mean a decade or more of waiting for light-mitigation technologies to be installed at existing windfarms, the law includes a provision allowing counties to use bonds to help pay for the technology earlier than the law would require.

Several windfarms are proposed to begin construction in Kansas after the July 1 date. Among them is [Enel Green Power North America's](#) (Andover, Massachusetts) Skyview Development Windfarm near Concordia. The facility would use 60 wind turbines to achieve a nameplate generating capacity of 180 MW. Construction is set to begin next year and be completed in 2025. Subscribers can learn more by viewing the [project report](#).

While blade flicker during the day appears to be a less pressing concern, manufacturers are taking note by experimenting with blade design that reduces the flicker effect. By altering the shape or angle of the blades, the strobe effect can be reduced or even eliminated.

While light abatement technologies have shown promise in addressing the concerns of light pollution from wind turbines, there is still much work to be done. The wind industry will need to continue to invest in research and development to refine these technologies and make them more effective. Legislation, such as that passed by Kansas, Washington and other states, may be a significant driver in these developments.



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The 2023-2024 spending year for the Chemical Processing Industry will have a unique set of challenges, including the continued bounce-back from the pandemic, the Russia-Ukraine conflict, inflation, and the push for low-carbon investments.

Join our industry experts as they discuss the big issues and trends impacting project spending for the global Chemical Processing Industry for 2023 and 2024.

Topics to be discussed in this webinar include:

- Current state of petrochemical capacity additions
- Chemical recycling
- Low-carbon investments
- Regional expenditures and growth
- Potential of global recession

We hope that you are able to join us for this timely and informative webinar! [Click here](#) to RSVP.

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