



Manufacturing Sustainably Isn't Just a Goal. At Aurora, It's an Ongoing, Daily Focus.

Here at Aurora, we care about the environment and believe that wise, thoughtful use of resources **isn't just important, but is essential, to running a manufacturing operation.**

That commitment to sustainable manufacturing practices was a significant factor in deciding to move from our former plant in Aurora, Illinois, USA, to a new facility in Yorkville that could be redesigned with numerous state-of-the-art sustainability upgrades. It's also why we've spent millions on sustainability upgrades at our new Yorkville, Illinois, plant and made a commitment to implementing ISO14001 as the framework for an extensive Environmental Management System.

We work daily to implement and upgrade our sustainability program. But that commitment goes far beyond our walls. In addition to maintaining globally-approved environmental protection standards, Aurora is also setting a sustainability standard for other manufacturers in North America and Europe and sharing the lessons we have learned.

As members of the Valley Industrial Association (VIA), which serves manufacturers throughout Northern Illinois, we've begun sharing our sustainability management ideas with other manufacturing operations in the region and are helping them identify ways to save energy and water resources and also reduce waste. We hope to have a wider impact over time as we share these lessons with others in the US and global textile and printing industries.

It's a big task, yet an important one. It's also complex, as you'll see below. But it's worth the time and effort we've invested building a global model for sustainable manufacturing. And it's another reason why we are proud to Invest in American Manufacturing.

Sustainability Facts:

At the new Yorkville, Ill., plant, Aurora has implemented (and qualified for) the following sustainability plans and certifications:

- ISO14001 – We began the planning process for implementing ISO14001 in 2009 and are certified to the latest standard (ISO14001:2015) as of February 2018.
- The Smart Ideas for Your Business Program to save electricity through ComEd (regional electric utility) <https://www.comed.com/Pages/default.aspx>

- The energySMART program to save natural gas through Nicor Gas
<https://www.nicorgas.com/>

What is ISO14001, why is ISO14001 certification important and how is this good for the environment?

- ISO14001 is a globally-accepted standard and framework for establishing, implementing and maintaining an ongoing Environmental Management System (EMS) and is now the framework for Aurora’s ongoing EMS.
- ISO14001 provides a comprehensive framework for managing all aspects of an EMS.
- ISO14001 ensures the organization has a commitment to continual improvement, pollution prevention and compliance with requirements.
- Aurora’s EMS goals include reducing landfill waste, reducing energy consumption and improving waste water processing.
- ISO14001 provides evidence and reassurance to our customers and supply chain partners that we have an EMS plan in place that we are following daily at all levels of the organization.
- Implementation involves all our employees and buy-in from employees at every level, in every department, as well as employee training.

The natural gas and electricity components of Aurora’s new plant were designed to significantly reduce manufacturing carbon footprint. Below are basic metrics that compare electric and natural gas usage at the former plant in Aurora, Illinois, and the new plant in Yorkville, Illinois. As a reference, Aurora relocated manufacturing operations to the new Yorkville plant in 2015:

New Yorkville Manufacturing Operation compared to Aurora Plant	
Electric	10% reduction in electric consumption in the new plant
Natural Gas	50% reduction in natural gas consumption the new plant

This reduction in natural gas and electricity consumption at the new plant represents an annual reduction of 4,134 metric tons of CO². That is the equivalent of 465,178 gallons of gasoline per year or 4,523,015 pounds of coal burned.

Source: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Measures taken in the new plant to reduce electric and natural gas consumption include:

- Aurora made the commitment to invest in and install the best equipment.
- Over \$1 million was invested in new equipment alone. New equipment included:
 - Variable Speed Drives to adjust motor speed to match demand (to prevent operating equipment at full speeds always).
 - New higher efficiency boilers powered by gas.
 - A Building Automation System (BAS) that allows us to schedule equipment to turn on and off automatically through a central computer, which helps reduce energy consumption:

- The Building Automation System ties various pieces of equipment back to a server.
 - This not only provides real time monitoring and reporting features, but also controls and optimizes the running and shutting down of equipment. As a result, this equipment does not have to run longer than necessary.
 - Unit heaters.
 - Proper insulation.
 - Heat exchangers that recover heat and then re-use that heat to preheat water for the boilers and other equipment.
- Untold manpower hours from 2009 to present were invested in developing Aurora's sustainability plan.
- Additional labor hours were spent installing the equipment.
- Aurora replaced steam, which was used for heating in some areas of the former plant, with natural gas heaters throughout the new plant.
- In the new plant Aurora also installed a state-of-the-art finishing Wide Width Range, combined and optimized two standard-width finishing Ranges into one, and then recycled two older Ranges that were beyond their useful life by deconstructing them and recycling the metal.
- The new plant exclusively uses LED lighting throughout the new plant, which is both energy-efficient and long-lasting. This also reduces landfill waste. The new plant has:
 - * 75+ exterior LED lights and
 - * 500+ interior LED lights.

Aurora has made a significant investment at the new Yorkville plant in an advanced plan for managing water use and water-based effluent. This includes:

- A pre-treatment program for the effluent produced from wash operations. The system is governed by the Illinois Environmental Protection Agency (IEPA) and the Yorkville Bristol Sanitation District. As part of this, Aurora adjusts pH levels and controls solids levels.
- This is a constantly evolving system and Aurora is continually looking for new methods to remove solids.
- Meanwhile, *water usage in the new plant is currently 50% less than the amount of water used in the Aurora plant.* This was accomplished by:
 - Switching from narrow rope bleaching of fabric to open wide-width bleaching.
 - Combining the scour, de-size and chemical applications, which were done in separate steps in Aurora. In Yorkville those steps are done simultaneously.
 - Implementing best practices to minimize water usage for clean-up and processing.

Aurora follows specific US EPA and IEPA guidelines, which are now easier to manage than at the old plant. For example:

- Aurora's National Pollutant Discharge Elimination System (NPDES) for storm water runoff is easier to manage at Yorkville because all the manufacturing is under a single roof.
- Aurora installed new pipes and drains.
- There is also no bulk storage of chemistries onsite or outdoor tanks, which makes management of chemicals safer.
- The air permit requirements are easier to manage in the new plant because the new equipment is so efficient.

Aurora does not use solvent-based chemistries.

- No solvent-based coatings or finishes are used. Aurora used only water-based chemistries at the old plant and uses only water-based chemistries at the new plant. All of Aurora's products are made with water-based chemistries.

Is Aurora's Yorkville plant better for the environment than, say, a plant in a country with no similar laws and guidelines?

- Yes, and by a great deal. The Aurora plant operates under an EPA-regulated and approved air permit designed to protect air quality. This includes significant limits on volatile organic materials (VOM) and hazardous air pollutants (HAP) that might be released by a manufacturing operation.
- The plant operates under a water discharge permit which sets strict standards for the content and amount of effluent discharged. This includes:
 - Adjusting PH levels within specific Ranges;
 - 24/7 system monitoring;
 - Regularly collecting water samples, and
 - Meeting specific guidelines for removal of solids.
- Along with pH and solids previously discussed, various other chemicals are always monitored closely.
- Treated effluent discharged from a plant in the US, such as Aurora's, which follows EPA guidelines, is significantly kinder to water regional water resources than effluent discharged by manufacturers in other parts of the world in countries with no environmental enforcement agencies.

Aurora has achieved great strides in sustainability over the past three years, but we also see our sustainability plan as a continual and evolving process. Future sustainability steps include:

- Continuing to reduce material sent to land fill.
- Reducing electricity consumption.
- Improving the cleanliness of our waste water effluent by evaluating and implementing various waste treatment systems.

- Continuing to evaluate the product life cycle of our products and developing disposal/recycling recommendations.

Aurora's sustainability goals, technologies and programs benefit your employees, as well as the environment:

- All levels of employment at the Yorkville plant are involved in our EMS. For example, the hourly work force is engaged and enthusiastic about supporting efforts that protect the environment and are happy to work for a company that has a commitment to sustainability. Our employees do not want to harm the environment. They want to help it.
- They also enjoy working in a clean, safe environment.

Aurora's sustainability goals, technologies and programs also benefit our customers:

- In addition to offering products at a competitive pricing, we can offer an authentic and verifiable sustainability story they can incorporate into their messaging and marketing.
- Increasingly, consumers are looking for products made by manufacturers who are committed to using manufacturing processes that are enhanced to protect the environment. In turn, many brands are looking for supply chain partners that have verifiable sustainability programs. Aurora is a supply chain partner with a verifiable sustainability story their customers can count on.

What are VOC's and does Aurora use chemicals that contain VOCs?

- Aurora does not use chemicals that contain Volatile Organic Compounds, or VOC's, which are common in many solvent-based dyes and chemicals. Many VOC's are harmful to human health and the environment.