WVU POLLUTION PREVENTION NEWSLETTER

NOVEMBER 2024

INDUSTRY FOCUS: Plastics Products Manufacturing

Welcome to the latest edition of the WVU Pollution Prevention Newsletter! In this issue, we are excited to introduce the dedicated members of the WVU Pollution Prevention Team, committed to environmental stewardship. Explore valuable insights as we share industry best practices for enhancing energy efficiency and sustainability in plastic products manufacturing facilities. You will also find P2 tips that can be implemented at home or in the workplace. Lastly, discover the range of services we offer to support Small and Medium-sized Enterprises and businesses throughout West Virginia. Stay informed, inspired, and engaged with our commitment to environmental excellence and community impact.

FEATURED IN THIS EDITION

WHAT IS POLLUTION PREVENTION

Pollution Prevention (P2) is one of the key approaches towards an initiative to improve the energy efficiency and productivity of key industries while prioritizing environmental sustainability. The initiative focuses on reducing or preventing pollution at its source.

The primary objective of our Pollution Prevention program is to provide technical assistance to Small and Medium Enterprises in **key industries** and within **disadvantaged communities** in West Virginia by assisting with identification, development, and implementation of P2 methods. The recommendations provided to the industries are designed to help the business lower operational costs by reducing expenditures, water and energy usage, waste, and disposal costs, while at the same time maintaining and often improving productivity.

Key Industries:

1. Food and Beverage Manufacturing and Processing
2. Chemical Manufacturing, Processing, and Formulation
3. Automotive Manufacturing and Maintenance
4. Aerospace Product and Parts Manufacturing and Maintenance
5. Metal Manufacturing and Fabrication

OUR SERVICES

1. **Pollution Prevention Assessments:** The project team will make a planned visit to your facility to assess and gather data on energy, water, material, and personnel use. Assessment data along with input from the facility managers will be used to develop P2 recommendations. A detailed report based on the findings will be submitted to the facility shortly after the on-site assessment.

2. **Energy Audits/Assessments:** Applying for a USDA-REAP grant and need an assessment? Want to save money? The project team will visit your facility and identify opportunities to improve energy efficiency. A detailed report will be provided to the business, including estimates of implementation costs, energy use savings, energy cost savings, and simple payback period for each identified opportunity.

3. **Training Workshops:** Training workshops will be conducted to help businesses learn P2 Best Practices, tools, techniques, and resources available, and how to modify their process or site to improve energy efficiency, productivity, and environmental sustainability.

4. **Technical Assistance:** The project team can provide on-site or off-site technical assistance on a variety of industrial concerns related to topics including pollution prevention, energy efficiency, sustainability, environmental impact, and process improvement. Contact us for assistance!

5. **USDA-REAP Application Assistance:** Applying for grant funding can be a challenge, especially for the small businesses that do not have an expert at grant-writing on the payroll. Our project team can help you navigate the application process and assist with completing the application for USDA-REAP funding.

P2 INDUSTRY FOCUS

Tips for Plastics Products Manufacturing

- **Install Regenerative Thermal Oxidizers (RTOs):** Regenerative Thermal Oxidizers (RTOs) are efficient air pollution control systems that destroy Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs), and odors through high-temperature oxidation. Contaminated air is preheated using heat exchange media, oxidized at 1,400°F – 1,800°F, and cooled while transferring heat to incoming air, maximizing energy efficiency. RTOs achieve 95 - 99% pollutant destruction and are widely used in industrial applications.

- **Utilize Closed-Loop Cooling Systems:** An open-loop water cooling system draws water from an external source, circulates it through the system to absorb heat, and then discharges it. In contrast, a closed-loop cooling system recirculates water within a sealed loop, eliminating the need for a continuous external water supply. This conserves water, reduces energy consumption, minimizes environmental impact, and enhances the efficiency and reliability of molding and machine operations.

- **Use Water-based Mold Release Agents:** Switching to water-based mold release agents from traditional solvent-based types reduces VOC emissions, aligns with environmental regulations, and eliminates flammability risks due to the absence of volatile solvents. Water-based agents minimize risk by removing hazardous materials from the facility. They provide comparable performance in molding processes, including ease of application and surface finish, while being safer for operators and the environment.

- **Switch to Non-Toxic or Less-Toxic Materials:** Using non-toxic or less toxic materials, like low-styrene gels and resins, in production minimizes hazardous emissions, reduces worker exposure to harmful chemicals, and aligns with safety and environmental standards. These materials offer similar mechanical and chemical performance while lowering styrene content to reduce VOCs and toxic byproducts during manufacturing. Also, these resins are compatible with existing production equipment and techniques, requiring minimal process adjustments.

P2 @ WORK

Improve Sustainability at Work

- **Upgrade to Motion-Sensing Lighting:** In conference rooms, break rooms, hallways, and other common areas, the lights are often left on even when the areas are unoccupied. Occupancy sensors can be installed in these areas, allowing the lights to turn off until someone enters the area, reducing energy usage and energy costs.

- **Implement Flexible Work Policies:** Much of the work that is done at the office can often be done from home. Implementing flexible work policies, including remote or hybrid work schedules, can reduce energy use at the workplace and protect the environment by reducing pollution caused during daily commutes to and from work.

- **Develop a Printing Policy to Reduce Paper Waste:** Implement a printing policy that discourages printing unless necessary. Establishing criteria to reduce unnecessary printing can reduce energy costs, printing costs, and paper waste.

P2 @ HOME

Make a Positive Impact at Home

- **Use a Clothesline or Drying Rack:** Drying clothes outdoors on a line or indoors on a rack instead of using an electric dryer has many benefits. This simple step saves energy, lowers utility bills, and reduces wear and tear on your clothes, extending their lifespan.

- **Keep Houseplants to Improve Indoor Air Quality:** By adding houseplants, including spider plants, peace lilies, and aloe plants, you can improve your overall indoor air quality. These plants can improve purification by filtering mold, volatile organic compounds (VOCs), and other contaminants in the air. These passive methods of air purification decrease the need for active methods, ultimately increasing indoor air quality.

- **Switch to Low-VOC Products:** Choose paints, adhesives, and finishes labeled as "low-VOC" or "zero-VOC" for home improvement projects. Low-VOC products improve indoor air quality, reduce harmful emissions, and create a healthier environment for your family.

- **Reduce Plastic Use:** Replace single-use plastics with reusable alternatives like silicone bags, glass containers, or bamboo products. These simple changes can reduce plastic waste in landfills and oceans, promoting a healthier environment.

HIGHLIGHTING OUR IMPACT

The WVU Pollution Prevention (P2) team takes great pride in the impact we have within the borders of West Virginia since January of 2023. From energy savings to CO_2 reduction, the recommendations we develop for these businesses not only help these businesses improve their sustainability, but also their bottom line!

Look at the impact of the opportunities we have found! →

25 Energy Efficiency/P2 Assessments

50 Recommendations

With Annual Savings of…

$504,637 in Energy Costs

3,654 MWh of Electricity

11,897 MMBtu of Natural Gas

3,224 Metric Ton CO_2 Equivalent

UPCOMING EVENTS

Webinar: Improving Sustainability with the Toxic Release Inventory
Friday, January 31, 2025 @ 1:00 – 2:00 PM EST

Topic: Join us for a discussion of the Toxic Release Inventory and how businesses can utilize the Toxic Release Inventory tools to improve sustainability.

Register Here **or use the QR Code!**

Webinar: P2 Series – Pollution Prevention Best Practices for the Chemical Manufacturing Industry
January 27, 2025 @ 12:00 – 1:00 PM EST

Topic: Save money AND the environment with these Pollution Prevention Best Practices for the Chemical Manufacturing Industry. Part 2 of a 5-part series.

Register Here **or use the QR Code!**

Webinar: P2 Series – Pollution Prevention Best Practices for the Automotive Manufacture and Repair Industry
February 24, 2025 – 12:00 – 1:00 PM EST

Topic: Learn about opportunities to improve the sustainability and environmental compliance of Automotive Manufacture and Repair facilities while still maintaining profitability. Part 3 of a 5-part series.

Register Here **or use the QR Code!**

THE P2 TEAM

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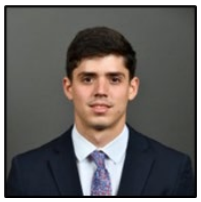
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Questions or Comments?