

WVU POLLUTION PREVENTION NEWSLETTER

SEPTEMBER 2025

INNOVATIVE PATHWAYS: ENERGY-EFFICIENT LIGHTING AND TRI FOR POLLUTION PREVENTION

Welcome to the latest edition of the WVU Pollution Prevention Newsletter! This issue highlights two key areas of **Energy-Efficient lighting systems** and the **EPA's Toxics Release Inventory (TRI) program**. Discover how optimized lighting design and smart technologies enhance safety, comfort, and sustainability across industries and homes. Learn how TRI data drives pollution prevention through transparency, accountability, and informed action. Together, these efforts reflect our ongoing commitment to energy efficiency and productivity improvement. Stay informed, inspired, and engaged as we continue building a cleaner, more sustainable West Virginia.

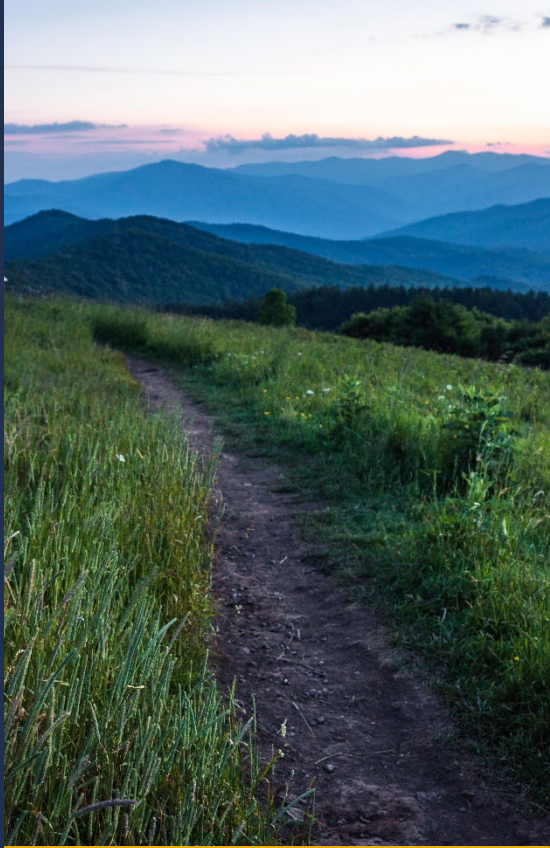
FEATURED IN THIS EDITION

WHAT IS POLLUTION PREVENTION	2
OUR SERVICES	2
POLLUTION PREVENTION FOCUS	3

HIGHLIGHTING OUR IMPACT.....	5
UPCOMING EVENTS	5
CONTACT US	5



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** in West Virginia by assisting with the 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.

POLLUTION PREVENTION FOCUS

ENERGY-EFFICIENT LIGHTING FOR SMART AND SUSTAINABLE FACILITIES

The Lighting Systems Optimization Program focuses on creating safe, comfortable, and energy-efficient environments across industrial sectors. Lighting is more than just illumination; it plays a vital role in ensuring safety, visibility, and product quality while influencing employee well-being and productivity. Since lighting can account for nearly 30% of a facility's total electricity use, improving systems can deliver significant savings and sustainability benefits.

By upgrading to modern, efficient lighting technologies, businesses within our National Emphasis Areas (NEAs) can achieve measurable reductions in energy use and operating costs while supporting broader environmental goals. Energy-efficient lighting also complements pollution prevention efforts by lowering power demand and associated greenhouse gas emissions.

Focus on NEAs:

- **Food and Beverage Manufacturing and Processing** – Bright, clean environments are essential for food safety and quality. Energy-efficient LEDs enhance visibility for inspection and production while reducing maintenance needs and operating costs.
- **Chemical Manufacturing, Processing, and Formulation** – Consistent lighting improves worker safety and process control. Upgrading outdated fixtures to industrial-grade LEDs ensures better illumination and lower energy use in demanding environments.
- **Automotive Manufacturing and Maintenance** – High-CRI LED lighting enhances accuracy and visibility in assembly and inspection areas. Adaptive controls further reduce energy waste in low-occupancy zones.
- **Aerospace Product and Parts Manufacturing and Maintenance** – Implementing zonal and adaptive lighting reduces fatigue and improves precision during detailed assembly tasks.
- **Metal Manufacturing and Fabrication** – Durable LED fixtures with sensor-based controls ensure visibility, safety, and energy savings in heavy-duty operations.

Why It Matters

Efficient lighting is one of the simplest and most cost-effective ways to save energy, improve safety, and boost productivity. A report from the U.S. Federal Energy Management Program states that adding lighting controls (occupancy sensors, etc.) can reduce lighting energy use by **10% to 90%**, depending on the space and usage.

Through lighting optimization across these key sectors, the WVU Pollution Prevention (P2) Team continues to help West Virginia industries achieve long-term sustainability, cost savings, and environmental excellence, proving that even small changes in lighting can make a big difference in performance and sustainability.

For further details, check out our [Website](#).

TRI DATA TO DESIGN EFFECTIVE POLLUTION PREVENTION STRATEGIES

The [EPA Toxics Release Inventory \(TRI\) Program](#) is one of the most significant tools for tracking industrial chemical management and promoting pollution prevention in the United States.

What TRI Does: Today, more than **21,000 facilities** report annually on over **800 listed chemicals**, detailing how they are **manufactured, used, released, treated, recycled, or disposed of**. The data help identify trends in chemical management, guide pollution prevention efforts, and measure progress toward environmental goals.

Why TRI Matters: TRI proves that **transparency drives improvement**. By making data public, the program encourages facilities to track and reduce toxic emissions, adopt cleaner technologies, and improve efficiency. Policymakers, researchers, and communities use this information to track progress, design solutions, and ensure accountability. TRI inspires proactive environmental leadership, turning information into real pollution prevention action.

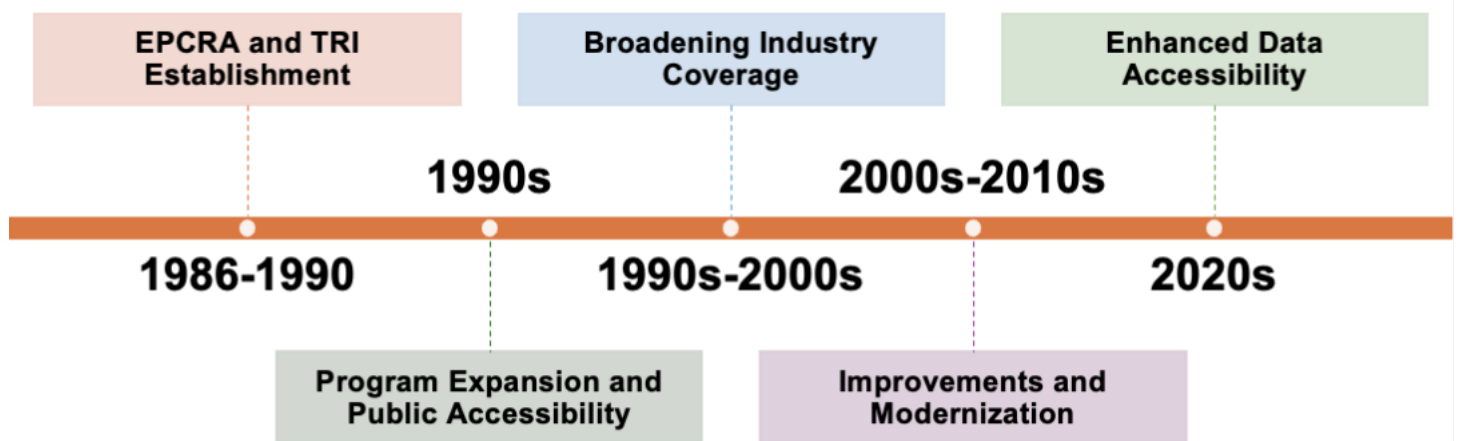


Fig: Timeline showing the evolution of EPA TRI Program

TRI timeline – key events

1986–1990: Following industrial disasters such as the 1984 Bhopal incident, Congress passed the **Emergency Planning and Community Right-to-Know Act (EPCRA)** in 1986. This law led to the creation of TRI, requiring facilities to report annual releases of specific toxic chemicals.

Late 1990s: During the 1990s, TRI grew significantly through the **Pollution Prevention Act (PPA)**, which expanded reporting to include waste management and source reduction activities. This shifted the program's focus from pollution control to **pollution prevention at the source**. Coverage also broadened beyond manufacturing to include utilities, mining, and federal facilities. With data now publicly available online, TRI became a valuable resource for citizens, researchers, industries, and regulators.

2000s–2020s: In the 2000s, the program modernized through digital tools such as **TRI Explorer** and **Toxics Tracker**, making data analysis easier and more interactive.

For further details about Toxic Release Inventory, check out our [webinar](#). The opening section of the webinar introduces the origins, purpose, and structure of the TRI, setting the stage for a deeper understanding of how facilities and the public can use TRI data to track and reduce toxic emissions and improve environmental performance.

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 CO₂ 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! →

31 Energy Efficiency/P2 Assessments

67 Recommendations

With Annual Savings of...

\$556,774 in Energy Costs

3,908 MWh of Electricity

13,448 MMBtu of Natural Gas

3,366 Metric Ton CO₂ Equivalent

UPCOMING EVENTS



Webinar: Optimizing Energy Usage in Poultry Houses

October 27, 2025 @ 1:00 – 2:00pm ET

Location: Virtual via Zoom

Topic: Join us on Zoom for our next webinar focused on optimizing energy use in poultry houses. Explore how heating, ventilation, and lighting systems affect overall energy demand in poultry operations and discover practical strategies to improve efficiency. The session will highlight best practices such as LED lighting, insulation upgrades, variable frequency drives, and renewable energy options like solar and geothermal systems, where all these aimed at lowering energy costs, improving bird comfort, and enhancing sustainability.

Register using the QR Code or [Click Here!](#)

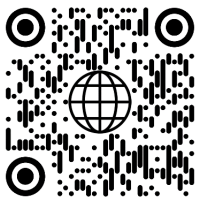
CONTACT US

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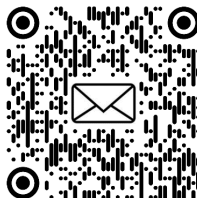
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P2 Website



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Questions or Comments?