

# **WVU POLLUTION PREVENTION NEWSLETTER**

**April 2025**

## **SPECIAL TOPIC: OUR STRATEGY**

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 a little information about some of the things we look for when performing industrial energy assessments. 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**

|   |          |
|---|----------|
| <b>WHAT IS POLLUTION PREVENTION .....</b> | <b>2</b> |
| <b>OUR SERVICES .....</b>                 | <b>2</b> |
| <b>OUR STRATEGY .....</b>                 | <b>3</b> |
| <b>HIGHLIGHTING OUR IMPACT .....</b>      | <b>4</b> |

|                              |          |
|------------------------------|----------|
| <b>UPCOMING EVENTS .....</b> | <b>4</b> |
| <b>THE P2 TEAM .....</b>     | <b>5</b> |
| <b>CONTACT US .....</b>      | <b>5</b> |



# 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.

# OUR STRATEGY

## Empowering Industrial Energy Savings

The Pollution Prevention (P2) Program at West Virginia University is committed to assisting industries in West Virginia to improve energy efficiency and lower utility expenses. The key areas of energy consumption in industrial settings can be summarized as: Lighting, HVAC systems, Building Envelope/Insulation, and Electromechanical Equipment.



- Lighting accounts for 17–25% of electricity use in industrial buildings. By replacing outdated technologies with LED lighting, installing occupancy sensors, and optimizing layout, facilities can achieve up to a 70% reduction in lighting energy consumption.



- HVAC systems consume 20–40% of a facility's energy. Common issues include poor maintenance, oversized equipment, and lack of zoning. Solutions like smart thermostats, duct sealing, and system right-sizing can cut HVAC energy use by 20–30%.



- The Building Envelope, including insulation, windows, and air sealing, is a key contributor to heat loss. Inadequate insulation and air leaks can result in 30–50% energy loss, which can be mitigated through insulation, weather stripping, and double-glazed windows, sometimes with payback periods of under two years.



- Electromechanical equipment such as motors, pumps, and compressors can make up 30–50% of electricity use. Upgrades like high-efficiency motors, variable frequency drives (VFDs), and leak detection in compressed air systems lead to substantial energy and maintenance cost savings.

The Pollution Prevention Lab's energy audits have already helped West Virginia industries save hundreds of thousands of dollars in utility bills while improving equipment performance and reducing environmental impact. By showcasing real-world case studies and using tools like MEASUR, Energy Calculators, and Audit Equipment, we demonstrated that strategic energy management is both practical and profitable. Interested companies are encouraged to contact the P2 Lab for a free virtual energy assessment or an on-site audit. Together, we can build a more efficient and sustainable industrial future for West Virginia.

## 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<sub>2</sub> 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! →**

**27** Energy Efficiency/P2 Assessments

**57** Recommendations

**With Annual Savings of...**

**\$513,309** in Energy Costs

**3,672 MWh** of Electricity

**12,452 MMBtu** of Natural Gas

**3,153 Metric Ton** CO<sub>2</sub> Equivalent

## UPCOMING EVENTS

### **WVU Pollution Prevention Conference @ West Virginia University**

*June 20, 2025 @ 10:00 AM – 4:00 PM ET*



**Location:** Advanced Engineering Research Building, Room 120  
101 Research Way, Morgantown, WV

**Topics:** Attend in-person or virtually via Zoom to enjoy presentations on various Pollution Prevention topics related to:

- Behavior-Based Approaches to Pollution Prevention
- Novel Approaches to Energy Efficiency & Sustainability
- Efficiency of Industrial Systems
- Case Studies
- And More...

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



### **Webinar: Water Conservation – Practical Strategies, Examples, and Best Practices**

*May 30, 2025 @ 12:00 – 1:00 PM ET*

**Topic:** Join us for a webinar on water conservation, including a framework toward identifying water conservation opportunities and discussion of specific best practices to reduce industrial water use.

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

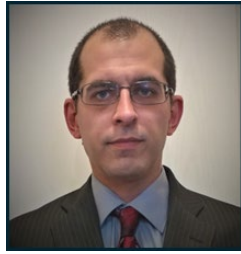


# THE P2 TEAM

## Faculty & Staff



Dr. Ashish Nimbarte  
PhD, PE, CEM  
Principal Investigator



Dr. Christopher Moore  
PhD, CEM  
Project Manager, Co-PI

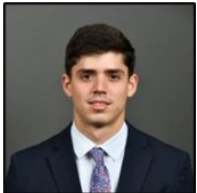


Dr. Imtiaz Ahmed  
PhD



Dr. Avishek Choudhury  
PhD

## Students



Juan Marino



Sagar Timilsina



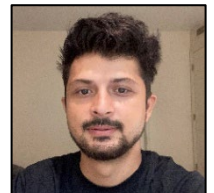
Akshay Patel



Tilak Bhusal



Ryan Stas



Aastik Sharma



Shihab Ullah



Aman Dhakal



Ummul Farah



Sagar Panthi



Sterly Pauliscat

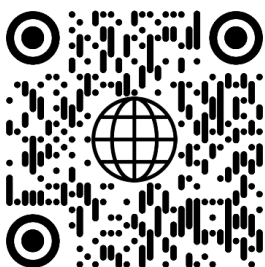
## CONTACT US

### ASHISH NIMBARTE, PHD, PE, CEM

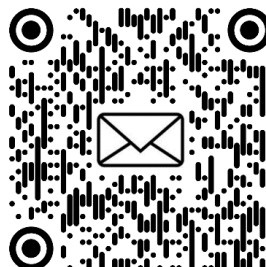
Principal Investigator, Department Chair  
Industrial and Management Systems Engineering, WVU  
Email Address: [ashish.nimbarte@mail.wvu.edu](mailto:ashish.nimbarte@mail.wvu.edu)

### CHRISTOPHER MOORE, PHD, CEM

Co-PI, Project Manager, Research Associate  
Industrial and Management Systems Engineering, WVU  
Email Address: [chris.moore@mail.wvu.edu](mailto:chris.moore@mail.wvu.edu)



P2 Website



Inquire about Services



Questions or Comments?