

American Fuel & Petrochemical Manufacturers



# How We Make Progress

## 2021 Annual Report

The members of the American Fuel & Petrochemical Manufacturers make and transport the fuels that keep Americans moving and the petrochemicals that are the essential building blocks for modern life. Our industries make life better, safer, healthier, and — most of all — possible.

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# A Message from the Chairman of the Board and the President and CEO of AFPM

During the past year, the world navigated a pandemic that brought disruption, challenges, and loss unlike anything most of us have ever experienced. While businesses and global supply chains were upended by the pandemic, U.S. refiners and petrochemical manufacturers continued to supply the energy and petrochemical products needed to keep America's economy, health care, and transportation systems moving. During this time, the indispensable role that our industries play in today's world has never been clearer.

Recognizing the growing needs within our communities, our members stepped up to aid first responders, nonprofits, and essential workers with the products and equipment necessary to continue to serve the public. They donated and increased production of personal protective equipment (PPE), while also driving innovations to make PPE even safer and reusable. Companies donated fuel cards to ensure uninterrupted travel and services, and supported their local communities by giving to and volunteering at food pantries, schools and blood banks.

Despite the pandemic, our commitment to safety remained undeterred. Our industries have some of the most mature safety systems in all of manufacturing. In fact, according to Bureau of Labor Statistics data, petroleum refining has the lowest rates of injuries or illnesses among all U.S. manufacturing sectors. Our member industries have also reduced the rate of process safety events by over 50 percent in the past 10 years.

This year, U.S. fuel and petrochemical manufacturers continued investments in technologies and projects to reduce emissions and create cleaner fuels. Our members are driving innovations in carbon capture storage and usage, launching new renewable fuel projects, and making breakthroughs in advanced recycling to reduce waste.

As we look toward the end of this crisis, we are prepared not only to help the country recover economically from COVID-19, but also to meet the demands of a growing world and global middle class. We will do so in a way that is sustainable and supports a rising standard of living worldwide, while reducing emissions and waste.

The last year will always be remembered as a time of unprecedented challenges. But it will also be remembered as a time when our members, along with other essential workers, remained courageously unwavering in their commitment to meet the world's needs. On behalf of AFPM, thank you for your hard work to make and deliver the fuel and petrochemical products that make life better, safer, and more productive not only for Americans, but for people around the world for many decades to come.



**Jeff Ramsey**  
Chairman of the Board

President and  
Chief Executive Officer  
Flint Hills Resources, LLC

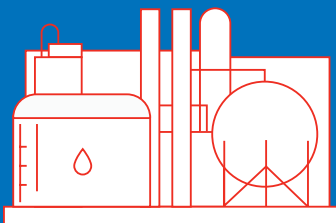


**Chet M. Thompson**  
President and CEO

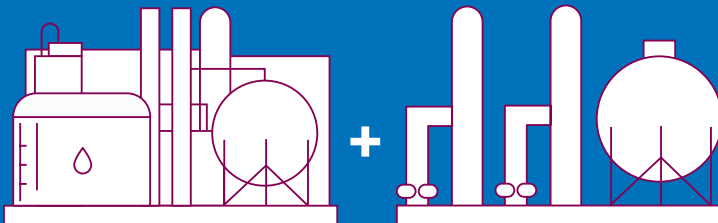
American  
Fuel & Petrochemical  
Manufacturers

# U.S. Refineries and Petrochemical Facilities

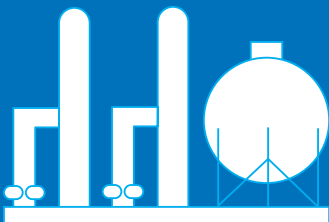
There are 131 operable refineries and 312 petrochemical manufacturing units in the United States.



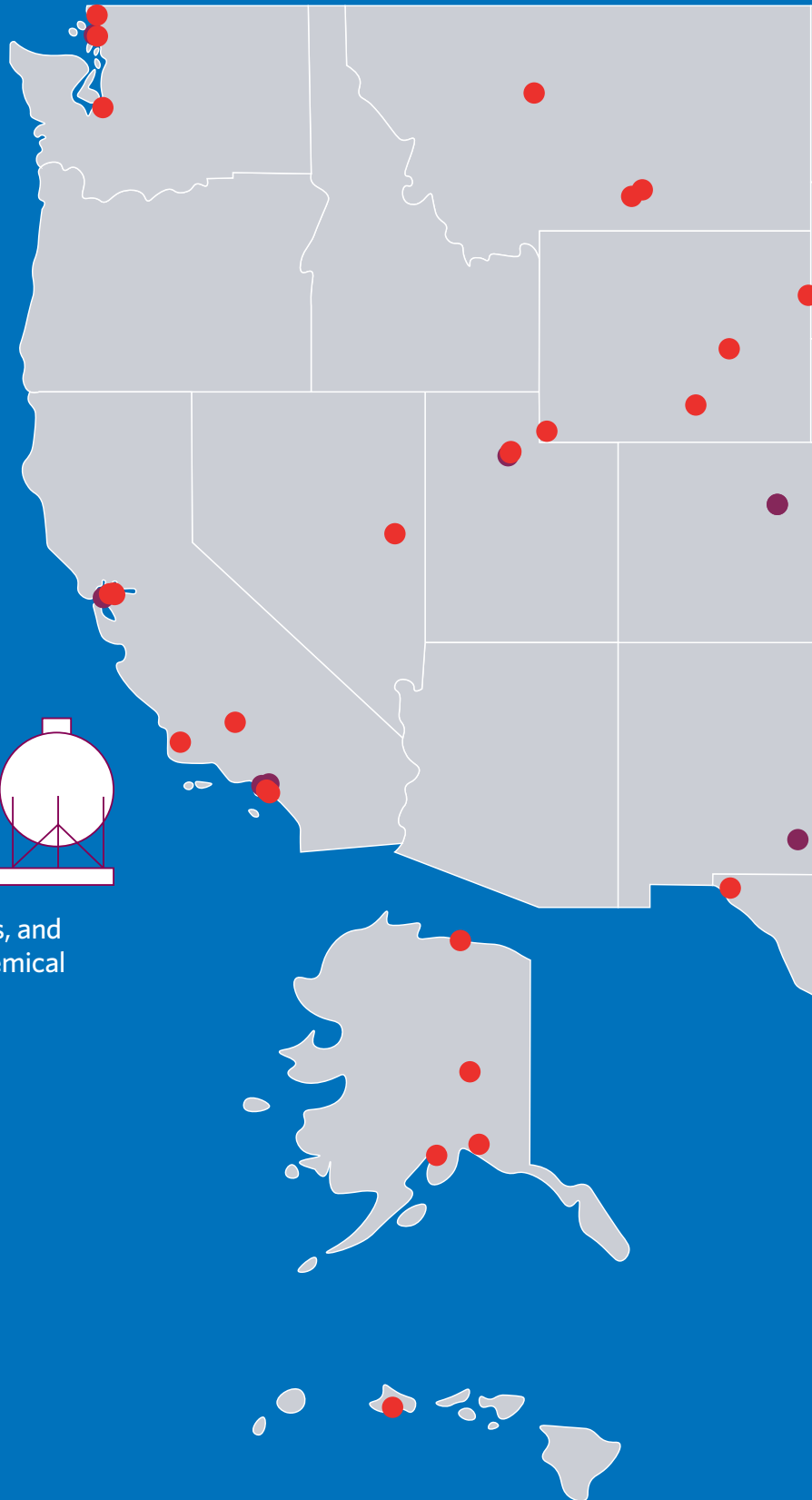
77 refineries produce gasoline, diesel, jet fuel and other products<sup>1</sup>

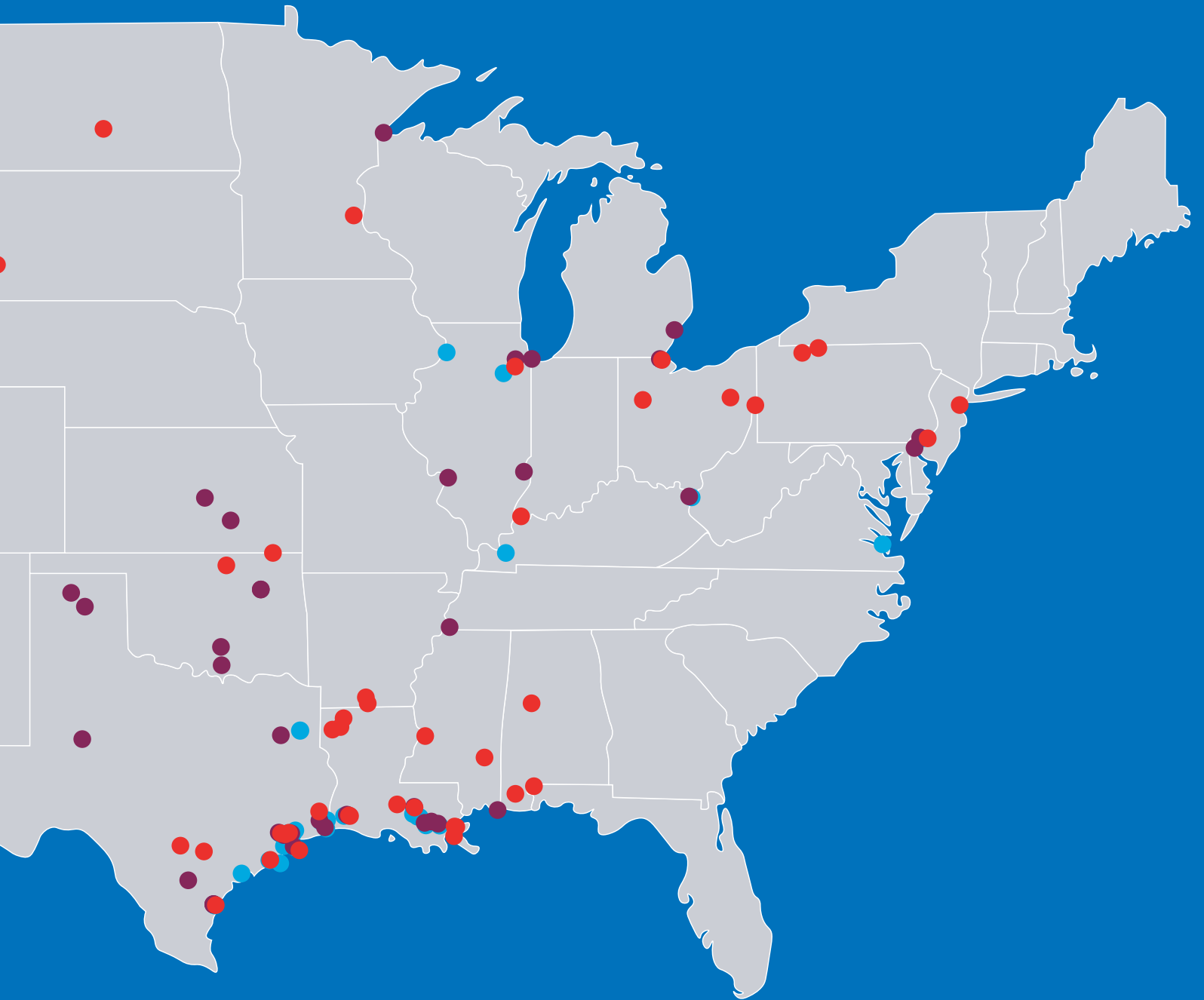


54 refineries produce gasoline and other fuels, and produce base petrochemicals at 186 petrochemical units colocated with the refineries<sup>2</sup>



126 standalone petrochemical units produce base petrochemicals<sup>3</sup>





# Refining – Keeping the World Moving

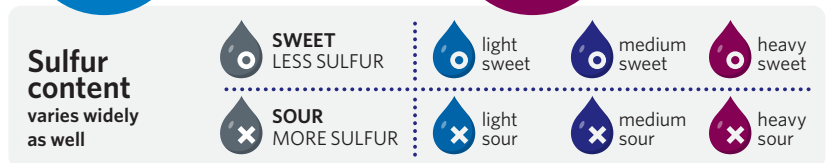
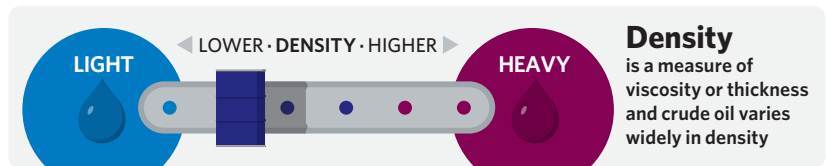
In 2020, U.S. refineries supplied 254 billion gallons of gasoline, diesel, jet fuel and other products to consumers in the United States and 105 countries around the world.<sup>4</sup>

U.S. refineries are the most sophisticated and complex in the world, allowing them to extract more value out of each barrel of oil than any other refining system in the world, and to process a diverse range of crude oil qualities that are sourced not only from the United States but from more than 30 countries around the globe. Many refineries in the United States can process both heavy crude oil that is high in sulfur as well as lighter lower sulfur crude oil, much of which is produced in the United States, to make the clean gasoline, diesel fuel, heating oil, jet fuel and other refined products demanded by consumers. This optionality combined with the efficiency of U.S. refineries creates a significant competitive advantage that is key to ensuring reliable, affordable energy for U.S. consumers, and enhances our nation's energy security.

**There are more than 150 different qualities of crude oil — from light and sweet to heavy and sour — produced throughout the world.**

Most of the crude oil produced in the United States is light, sweet crude, which is easier to refine, requires less processing, and has less sulfur. Heavy, sour crude is mostly produced outside of the United States. It is complicated and costly to refine because of its higher sulfur content.

Refineries are designed to process specific types of crude oil. Running the right crude enables refineries to run efficiently.



**simple refinery**

Processes light and sweet crudes, which require less processing and therefore are easier to refine

**complex refinery**

Processes heavy and sour crudes, which require specialized units and operations and therefore are more difficult to refine

**The U.S. is the #1 exporter of refined products as U.S. refiners have a competitive advantage due to their complexity and access to global markets.**

# 90%

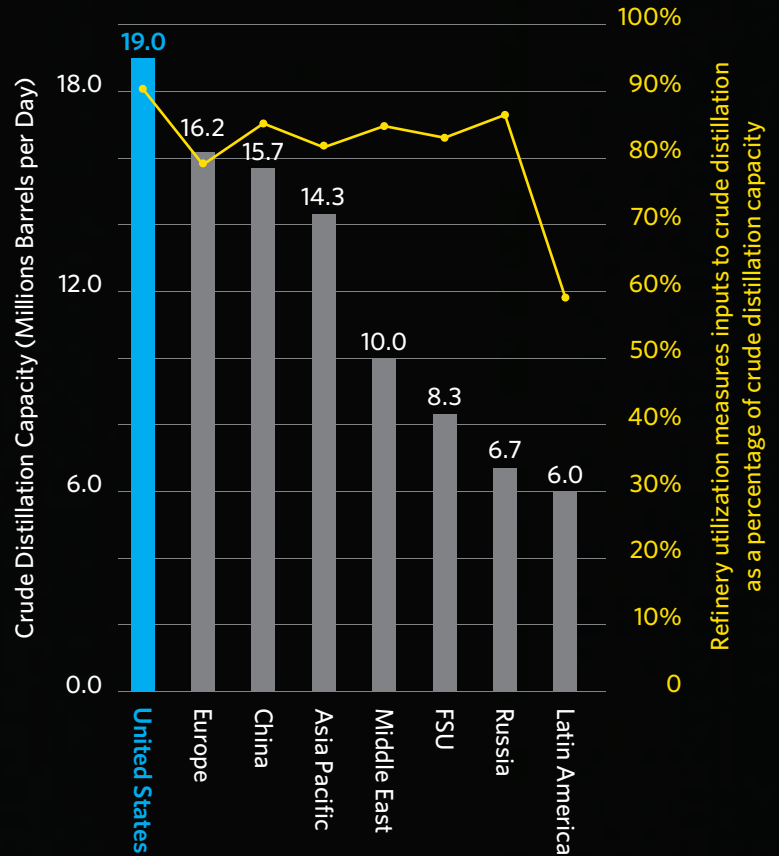
The United States leads the world in refinery capacity utilization.

### Weathering the Storm

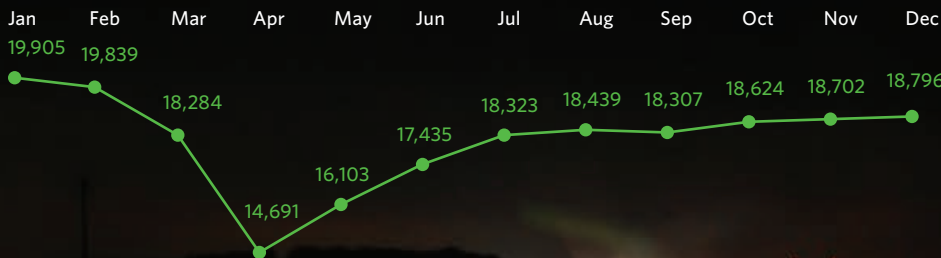
The complexity and efficiency of U.S. refineries makes the U.S. refining system resilient and better positioned to weather the impacts of the global pandemic. Year-end demand for gasoline, diesel and jet fuel was 11 percent below 2019 levels, but, according to projections by the U.S. Energy Information Administration (EIA) and other agencies and oil market analysts, demand for petroleum products is expected to recover to pre-pandemic levels by 2022.

### Global Refinery Capacity and Utilization<sup>5</sup>

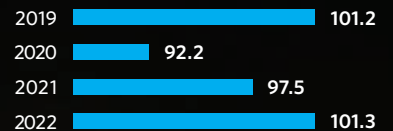
Refinery capacity utilization measures how much of the capacity of a single refinery or refining system actually gets used. The higher the utilization rate, the more efficient and competitive a refining system. The U.S. refining system is one of the most competitive in the world, which is why the United States leads the world in the supply of refined products to the global market.



2020 monthly U.S. consumption of gasoline, diesel, jet fuel and other products<sup>6</sup>  
thousands of barrels per calendar day

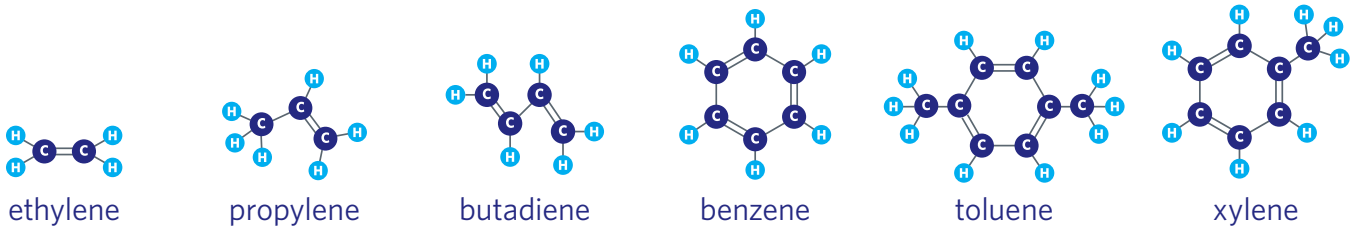


2019-2022 Global Liquids Demand<sup>7</sup>



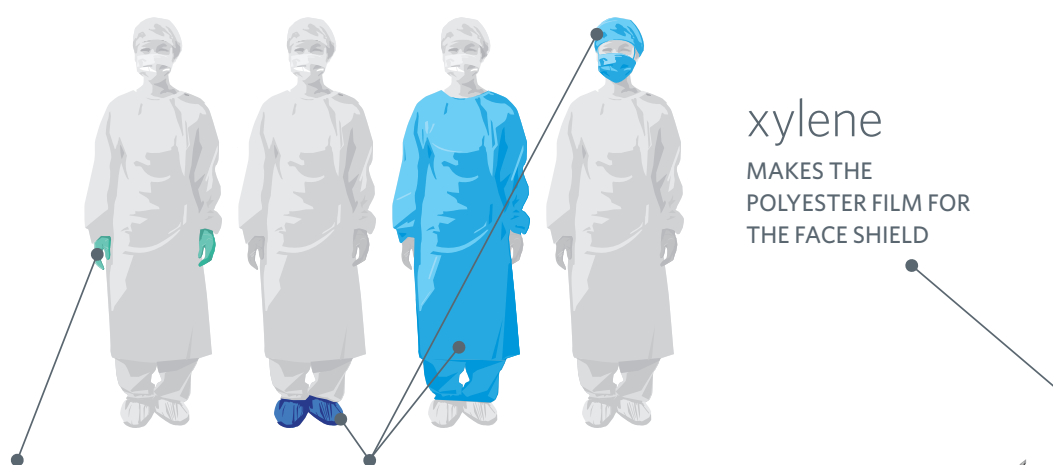
# Petrochemicals – Improving Lives Worldwide

The six basic petrochemicals — ethylene, propylene, butadiene, benzene, toluene and xylene — are found in and make possible everything from medical equipment to cell phones to computers.



## Providing Lifesaving Products

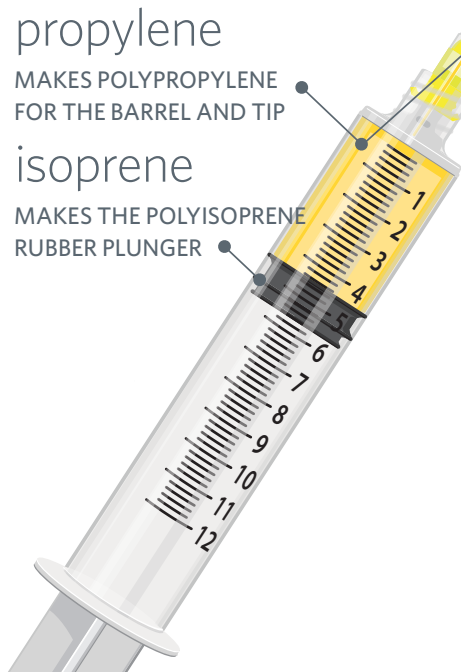
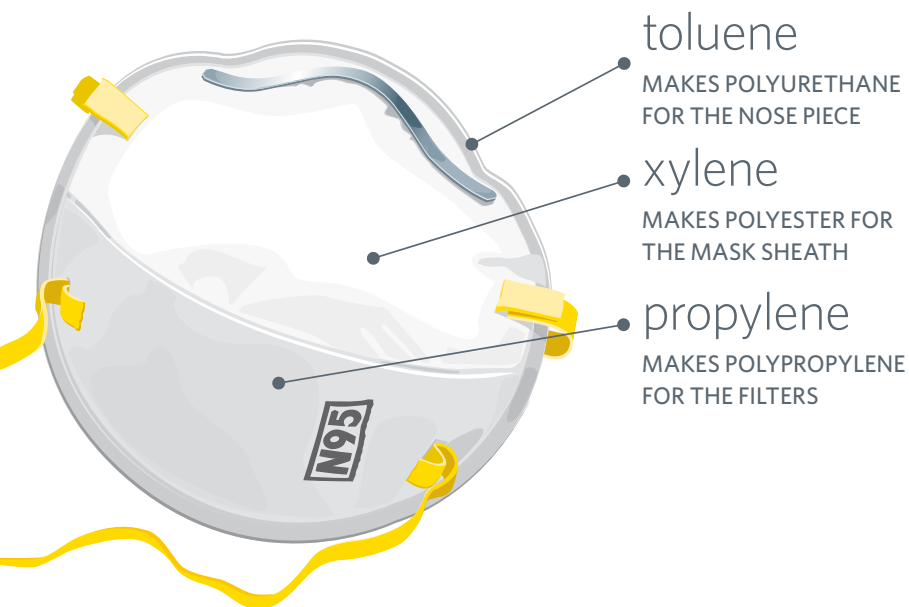
The importance of this industry has never been more evident as it was in 2020. During the pandemic, petrochemicals like propylene, toluene, butadiene, and xylene, provided the foundation for the essential products that helped keep millions around the world safe throughout the COVID-19 pandemic.



acrylonitrile & butadiene  
MAKES NITRILE RUBBER FOR GLOVES

propylene & xylene  
MAKES POLYPROPYLENE & POLYESTER FOR GOWNS, HEAD & FOOT COVERS, AND SURGICAL MASKS

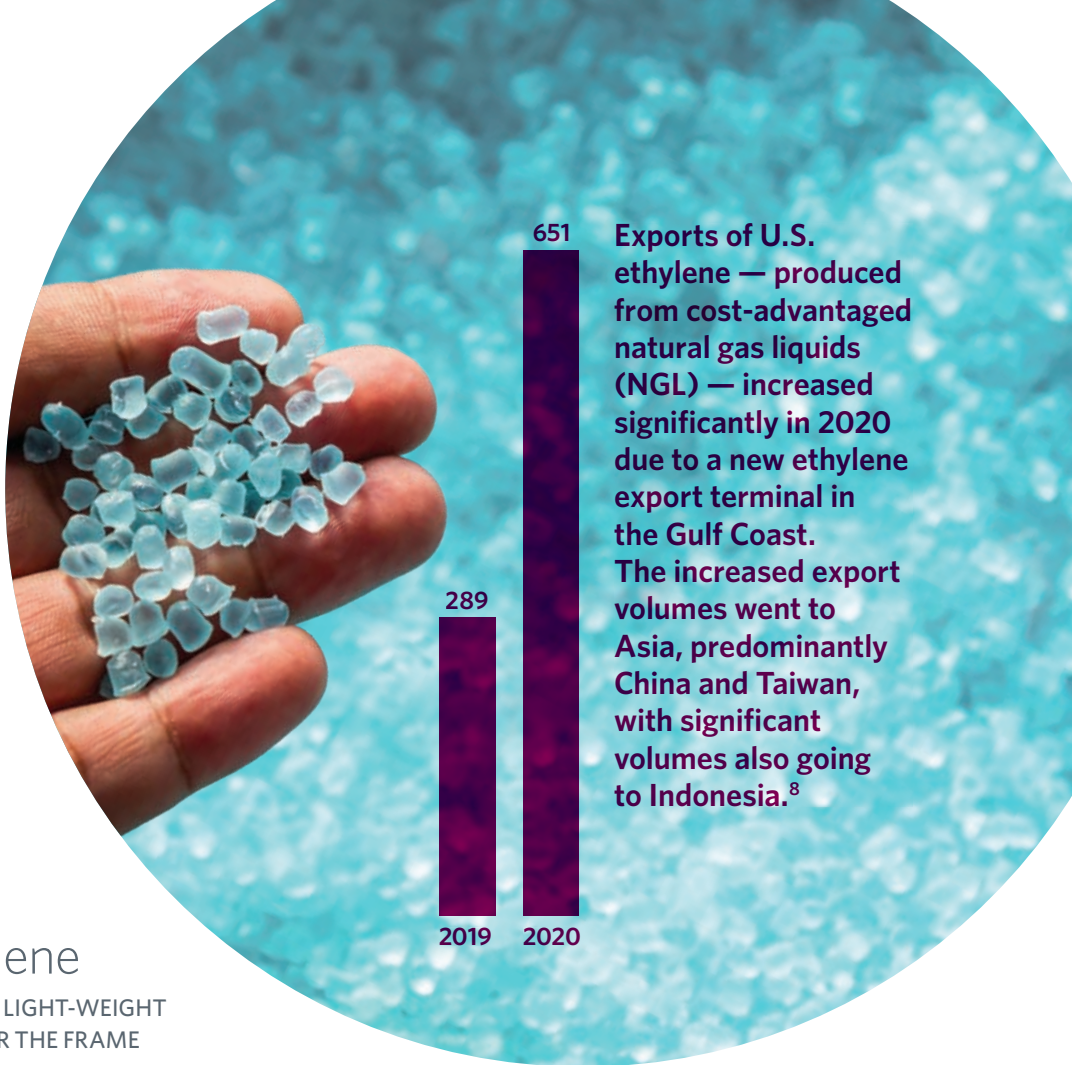
xylene  
MAKES THE POLYESTER FILM FOR THE FACE SHIELD





U.S. export of ethylene grew  
**125%**

Production grew +12%



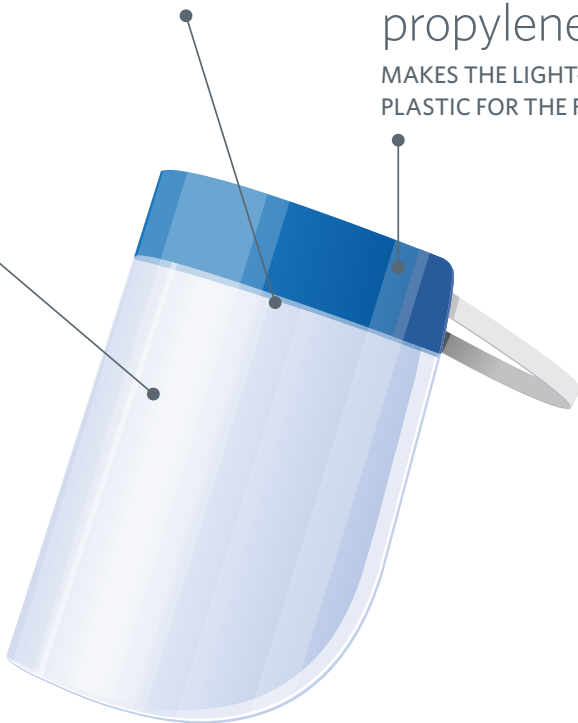
Exports of U.S. ethylene — produced from cost-advantaged natural gas liquids (NGL) — increased significantly in 2020 due to a new ethylene export terminal in the Gulf Coast. The increased export volumes went to Asia, predominantly China and Taiwan, with significant volumes also going to Indonesia.<sup>8</sup>

toluene

MAKES THE POLYURETHANE FOAM THAT ALLOWS COMFORT AND A GOOD FIT

propylene

MAKES THE LIGHT-WEIGHT PLASTIC FOR THE FRAME



Ethylene and propylene are the two most in-demand petrochemicals in any normal year. The United States continues to lead in ethylene capacity with 20 percent of the total market. But, amid the pandemic, U.S. production of **ethylene** — an important building block to make medical equipment, including syringes and IV bags — grew more than 12 percent due to the number of people hospitalized and in need of medical treatment.

**Propylene**, essential to the production of most PPE including face masks, surgical gowns, and other medical supplies, remained steady. U.S. capacity of this important petrochemical was 15 percent of the global market. The petrochemical industry and the products they enable will continue to be essential in fighting the pandemic and lifting the living standards of people all over world.

United States Ethylene Capacity 2019-2021 (actual and forecasted)



United States Propylene Capacity 2019-2021 (actual and forecasted)



All charts in 000 tonnes/year; data provided by ICIS Supply and Demand Database

# Midstream – Moving our Vital Products

Refiners and petrochemical manufacturers rely on complex supply chains to move oil, natural gas and other feedstocks to their facilities and products to their customers. Bringing the benefits of increased domestic energy production, expanded refining and petrochemical capacity and higher manufacturing utilization rates to U.S. consumers requires a “midstream infrastructure” — an integrated system of pipelines, ports and waterways, railroads, roadways and storage facilities that support moving America’s energy supplies from producer to consumer.

AFPM members are investing billions of dollars in the midstream sector, building, expanding, and modernizing the energy infrastructure network needed to safely and efficiently move and store increasing volumes of America’s energy resources. As is the case with any complex integrated system, the network is only as strong as the weakest link. Continued investment is vital to strengthen the supply chains that ensure that U.S. consumers have access to ample and affordable supplies of transportation fuels and other necessary products, as well as ensure that American industry continues to thrive.

## Moving Products Safely

**Pipelines are one of the safest modes for transporting petroleum liquids. Starting with the planning process, pipeline companies work with key stakeholders to address safety and security issues. During construction, only the highest quality materials are used, and the pipeline is inspected and tested before it goes into service according to, and often exceeding, the highest federal and engineering standards.**

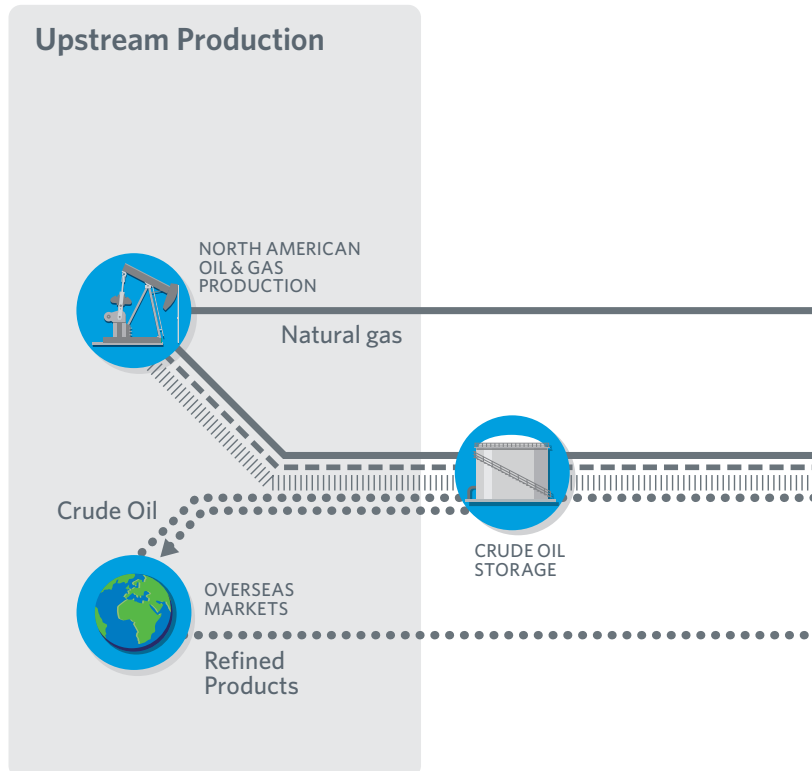
**Pipeline operators work constantly to keep their systems safe, using cutting-edge diagnostic tools to inspect pipelines, conducting preventative maintenance, monitoring pipeline pressure to quickly detect leaks and shutdown affected systems, establishing emergency response plans, and practicing emergency response to ensure rapid action if incidents do occur. For example, robotic devices called “smart pigs” (due to the squealing sound they make as they travel through the pipeline) are used to evaluate the inside of pipelines to ensure that they are safe.**



MIPC uses an In-line inspection tool (ILI) or also known as a smart pig. An example is a magnetic flux leakage (MFL). MFL pigs use strong magnets to detect disturbances in the magnetic field that are caused by defects. The relative size, shape, and location of the defects can then be determined and used for repair planning (Pre-COVID picture).

## Midstream Infrastructure<sup>9</sup>

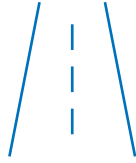
The integrated system of pipelines, ports and waterways, railroads, roadways, and storage facilities that move America’s energy supplies and petrochemical products from producers, to manufacturers, to retailers and consumers.





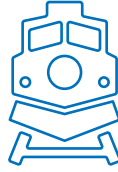
### SHIP

36,000 miles of inland waterways and 926 coastal and inland ports facilitate domestic fuel movements and provide access to global import and export markets.



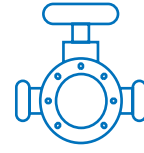
### TRUCK

Over 4.1 million miles of roadway support truck shipments of fuels over the "final mile" to retail outlets, businesses and homes.



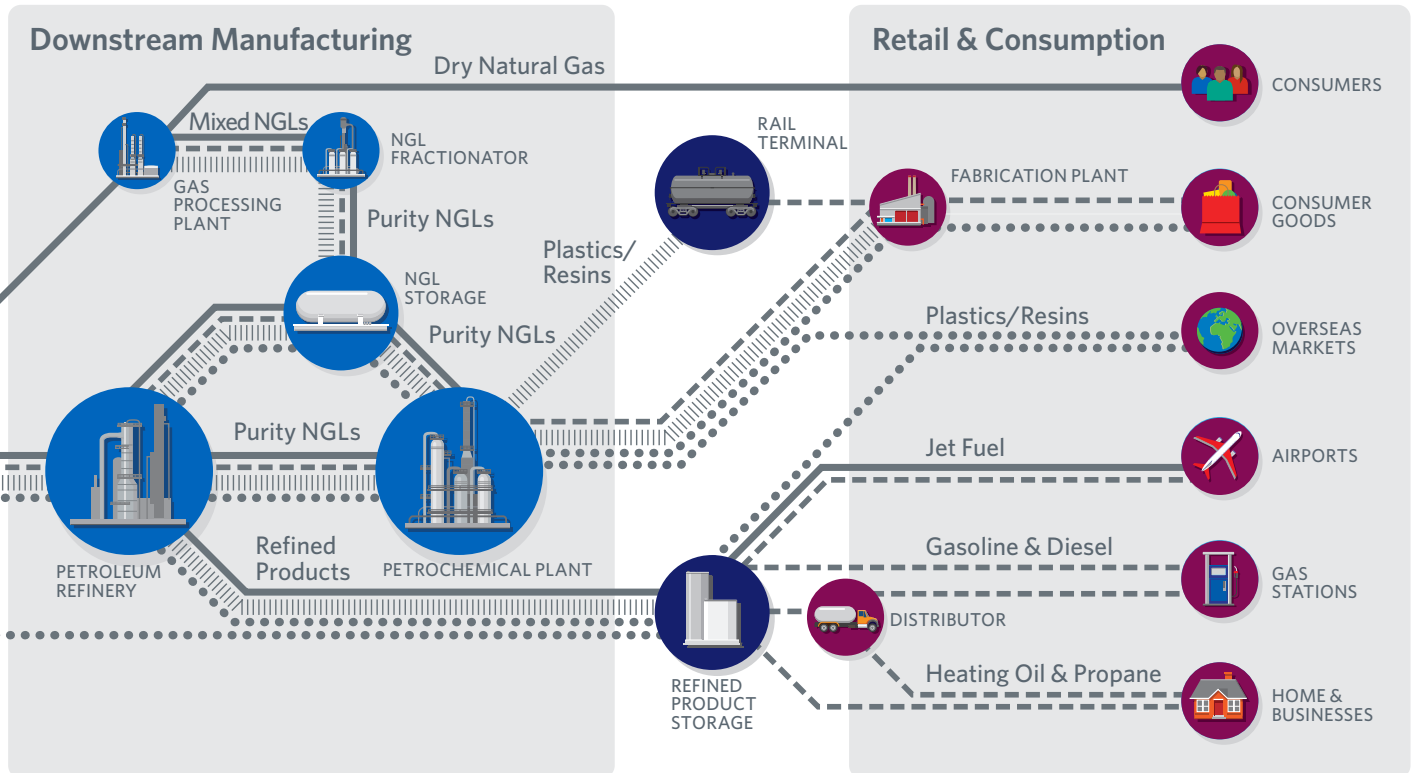
### RAIL

140,000 miles of railway track and 1.6 million freight rail cars move crude oil and NGLs from areas not served by pipelines or where pipeline capacity is inadequate.



### PIPELINE

224,000 miles of crude oil, natural gas liquids (NGLs) and refined product pipelines move raw materials from production areas to refineries and petrochemical plants and finished products to end users.



# Responding to COVID-19

## Keeping People Safe

As industries that employ millions of people and produce essential products, maintaining operations during the global pandemic was critical to the refining and petrochemical industries. As industries of planners, problem solvers and innovators, we adapted in the face of unprecedented challenges to keep our workers safe, our operations running and make sure people across our nation could get the products they need to navigate the pandemic.

Our companies know how to weather storms. In fact, we have preparedness plans and processes in place that cover all kinds of scenarios, from a weather event like a hurricane to other potential disruptions. These plans positioned us to quickly adapt to the unusual situation that we, along with the rest of the world, found ourselves in.



“The underlying theme that has helped the industry make these changes, keep people safe and make sure that the people coming on the site are responsible is the culture of safety throughout all these plants.

Their priority is to keep their families, themselves, and their coworkers safe. They’ve taken a lot of precautions in their personal lives to make sure there wasn’t any spread of virus.”

— *Lara Swett, AFPM Vice President, Technical and Safety Programs*

## Protecting our Employees

**As COVID-19 hit, refiners and petrochemical manufacturers evolved their pandemic preparedness plans to respond to the distinct threats of this virus. Companies reduced on-site staff to ensure proper social distancing, provided additional personal protective gear, and arranged for staff to work remotely. Sites deployed fever detection technology like infrared cameras, distributed Bluetooth thermometers for employee self-monitoring, enacted contact tracing protocols, and used electrostatic spraying to disinfect workplaces.**



**Our members also engaged in other activities to ensure that everyone was safe and informed of the developing situation, including standing up emergency support groups and medical teams to support their employees and to be prepared for emerging developments. These teams were made up of medical, logistics, safety and security experts who are ready to help the company and facilities manage challenge. These teams continue to meet regularly to assess changes in the situation and what they need to do.**



## Adapting our Operations to Meet Needs

The U.S. fuel and petrochemical industries have a long history of stepping up and innovating to meet the needs of our nation and the world. When spiking demand left few options for frontline workers unable to obtain hand sanitizers and personal protective equipment (PPE), many of our facilities quickly adjusted operations to produce these badly needed products and help mitigate the shortages.

Here are just a few examples of how our industries quickly stepped up to meet the growing demand:

**Valero Energy** transformed its ethanol plant in Iowa to produce hand sanitizer to help alleviate the supply shortages. It was used by Valero facilities and at local **hospitals** and emergency care providers.

**Dow Chemical** converted operations in Michigan and West Virginia to produce about **30,000 8-ounce bottles a week**, which was donated to area **hospitals and first responders** in the Great Lakes Bay Region and throughout the states of Michigan and West Virginia.

A team of **BASF** scientists and engineers worked on a compressed timeline to develop, produce, and donate more than **10,000 gallons** of hand sanitizer that was donated to **frontline workers** in New York, New Jersey, Michigan, Texas, Louisiana, Ohio and California.

**Honeywell's** Michigan plant produced hand sanitizer that was donated to the **Federal Emergency Management Agency (FEMA)**.

**ExxonMobil** facilities in Louisiana and Texas mobilized to produce and donate up to **160,000 gallons** of hand sanitizer.

# Environmental Stewardship

The U.S. refining and petrochemical industries are committed to a sustainable future and doing more with less, and continually strive to conserve natural resources and operate more sustainably — using water efficiently, preserving land and ecosystems and reducing emissions and waste.

## Reducing Emissions

In the last ten years, U.S. refineries have invested more than \$100 billion in facility upgrades, expansions, maintenance, and additional monitoring technologies to improve refinery efficiency, reduce emissions, and produce cleaner fuels. Working with the Environmental Protection Agency (EPA), our members support programs to limit and reduce air pollutants and greenhouse gases (GHGs).

AFPM members continue to achieve reductions in GHG emissions. And the increasing efficiency of U.S. petrochemical plants means lower emissions for each unit of product they produce. Despite a historic expansion in the petrochemical sector, EPA data show only a slight uptick in total carbon emissions in 2017 and emissions have been relatively flat since reporting began in 2010.

## Comparing Growth and Emissions

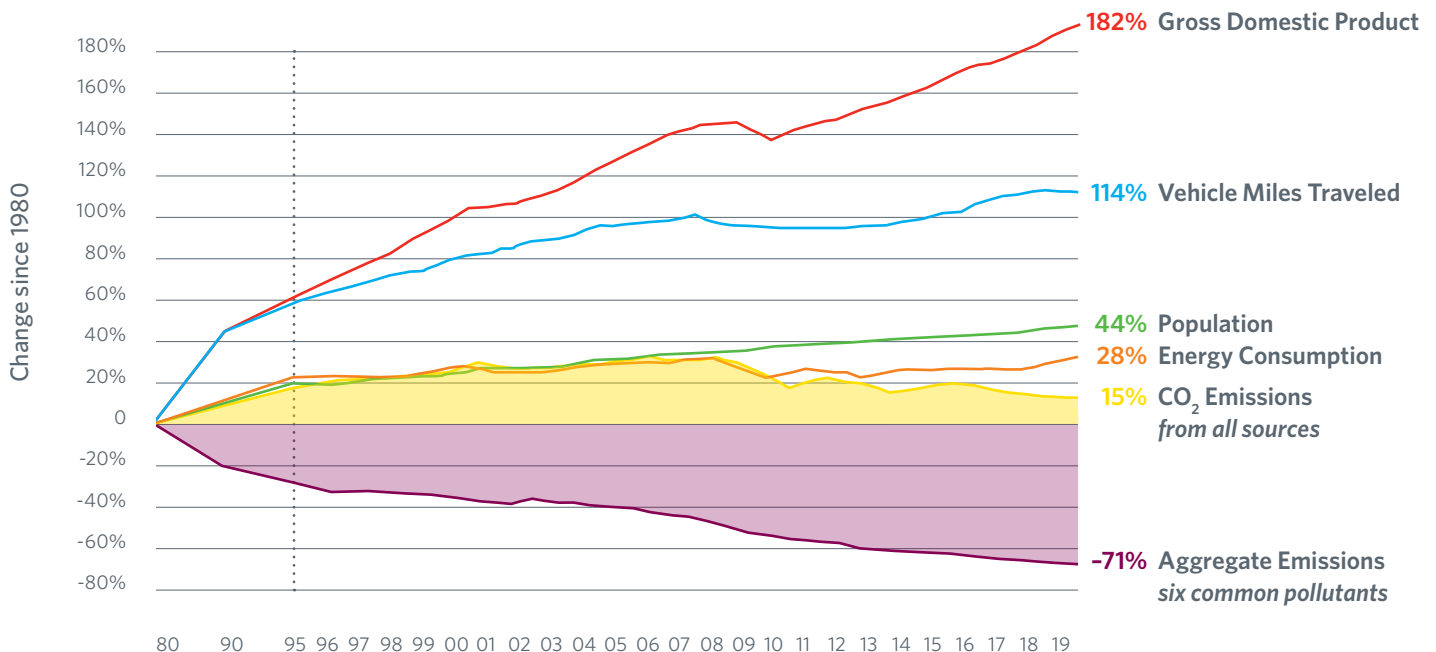
According to the EPA, from 1980 to 2019, emissions of the six most common pollutants decreased by more than 70 percent and ozone levels decreased by more than 30 percent. During this same period, the U.S. Gross Domestic Product increased more than 175 percent, the U.S. population grew by more than 40 percent, and vehicle miles traveled more than doubled and energy consumption grew by more than 25 percent.



**\$100 billion in investments**

Since 2010, U.S. refineries have invested more than \$100 billion to improve refinery efficiency, reduce emissions, and produce cleaner fuels.

## Comparing Growth and Emissions 1980-2019<sup>10</sup>





“It’s our responsibility as humanity to care and to take care, but especially being a petroleum company, our responsibility doubles. We need to put our individual interests aside for the good of our home, ourselves and generations to come.”

— Ashley Guerrediaga, CITGO

## To Care and to Take Care

CITGO’s Ashley Guerrediaga, compliance analyst and environmental sustainability committee founder, is another committed environmentalist. Guerrediaga established CITGO’s environmental sustainability committee after noticing simple, yet actionable, steps the corporate office could take to support sustainability practices.

Through Guerrediaga’s dedication, the committee has expanded to 40 people in just over a year. The team has already developed recycling programs and introduced training courses on waste management that are applicable to employees at home or at work. Their efforts are advancing a company culture of keen environmental awareness, starting at the individual employee level.



## Land Conservation

Refiners and petrochemical manufacturers are deeply attuned to the immediate needs of the ecosystems in which they operate. In partnership with national and local non-profits, these industries restore regional landscapes, certify habitats and host community education and engagement programs on conservation.



## Energy Efficiency

Our industries explore and implement techniques that enhance their energy efficiency, including investing in cogeneration systems at their facilities. Cogeneration systems improve supply reliability for power and provides some facilities with nearly half of the power needed for operations.



## Water Management

Water is essential in the cooling towers and boilers needed to produce fuel and petrochemicals, and recycling that wastewater is a major part of our commitment to use our resources responsibly. Refiners and petrochemical manufacturers invest in technologies that allow facilities to more efficiently separate oil and water to recycle and reduce wastewater. Through these efforts, as much as 70 percent of the water used in refining processes and landscaping at certain facilities is now recycled or reclaimed.



## Waste Reclamation and Recycling

Reducing the volume of waste produced is a focus of our member companies, which are continually looking for alternatives for disposal including reclamation and recycling. Companies have initiatives focused on recycling paper, plastics, aluminum, glass and cardboard; and recovering and recycling metals, including cobalt, copper, tin, and steel, reducing the overall volume of material to be landfilled and providing a beneficial use for the materials.



# AFPM members' efforts go above and beyond what is required by existing regulations.



**Flint Hills Resources** believes that industrial companies have a duty to respect nature and partners with groups such as Great River Greening and Friends of the Mississippi River to help restore and maintain wildlife habitats. Some of their sites in Illinois, Minnesota and Texas have earned official certification from the Wildlife Habitat Council.



**Monroe Energy's** commitment to the health and safety of the environment extends far beyond their fence line. Their proactive approach to minimizing their environmental impact includes investing and participating in environmental and habitat conservation along the banks of the Delaware River. They partner with and support organizations such as the Tri-State Bird Rescue, the Pennsylvania Resources Council, various local environmental groups, and the Partnership for the Delaware Estuary that leads science-based and collaborative efforts to improve the tidal Delaware River and Bay, which spans Delaware, New Jersey, and Pennsylvania. Monroe team members also work to advocate at the state and federal levels in order to emphasize the tremendous region-wide financial impact that refining facilities have, and also to highlight the industry's efforts to become even more sustainable through capital investments and other measures.



In line with its commitment to reduce GHG emissions intensity by 30 percent below 2014 levels by 2030, **Marathon Petroleum's** conversion of the Martinez facility from a petroleum refinery to a renewable diesel facility is anticipated to reduce the facility's stationary GHG emissions by approximately 60 percent, total criteria air pollutants by 70 percent and water use by one billion gallons per year.

## Commitment to Health & Safety

There is nothing more important to the fuel and petrochemical industries than safety. Our commitment to the safety of our employees, facilities and communities goes beyond upholding the codes and standards that guide each of our company's operations — it is embedded in the culture of our industries and instilled in every employee from the day they set foot on the job.

**We strive for zero injuries and incidents.** Our focus is on both process safety and occupational safety — applying good operating, engineering and maintenance practices, and ensuring the safety of workers through proper techniques, adherence to practices and continuous training. Guided by this focus, our members invest heavily in preventative maintenance to ensure the reliability of the equipment, and in operating practices to ensure the people are properly trained to work safely every time.



Petroleum refining is **#1 of 503** manufacturing industries for having the lowest rates of injuries or illnesses.<sup>11</sup>

Refining and petrochemical industries have reduced the rate of process safety events **by over 50%** in the last 10 years.<sup>12</sup>



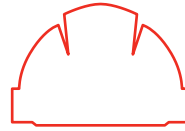
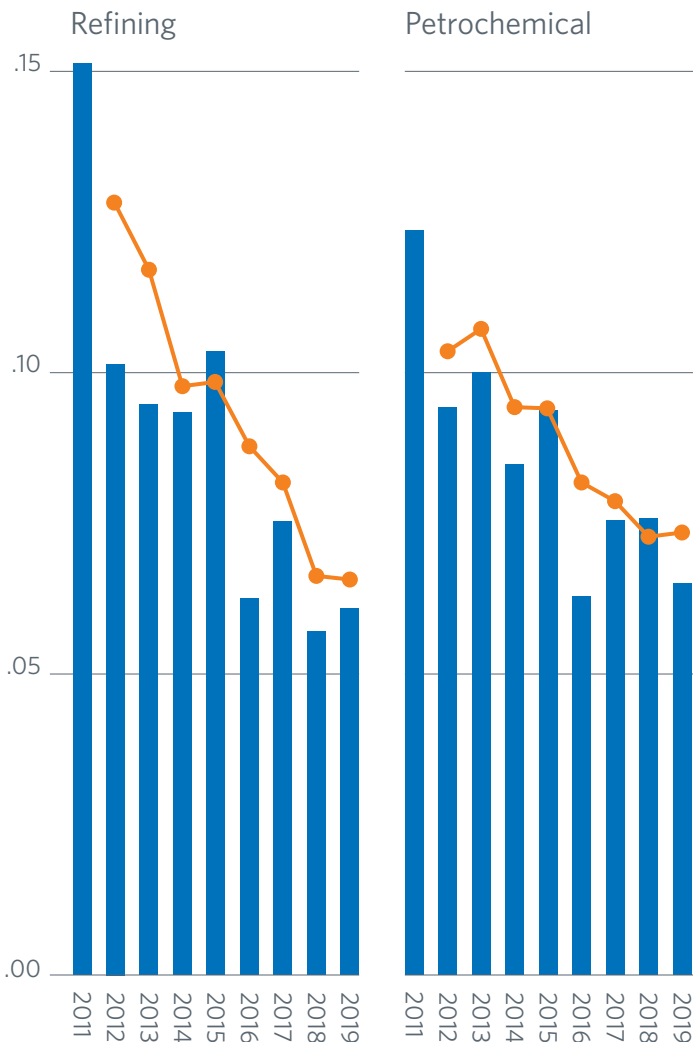
# Process Safety

Process safety involves applying good operating, engineering, maintenance and other practices to manufacturing processes. The process safety practices of fuel and petrochemical manufacturers are regulated by the Occupational Safety and Health Administration (OSHA) and the EPA. Refining and petrochemical sites are regularly monitored and audited to ensure their practices and procedures are being managed safely and in accordance with the law. Fuel manufacturers also comply with a number of additional, voluntary process safety standards and audits in order to promote a safe working environment.

## Measuring Process Safety Performance Improvement<sup>13</sup>

Process safety event (PSE) rates per 200,000 employee hours

● Three-year rolling average



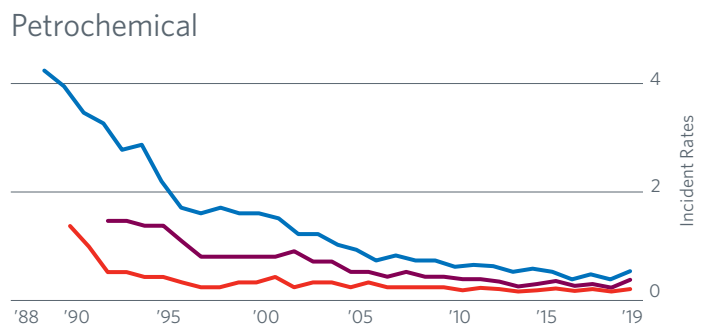
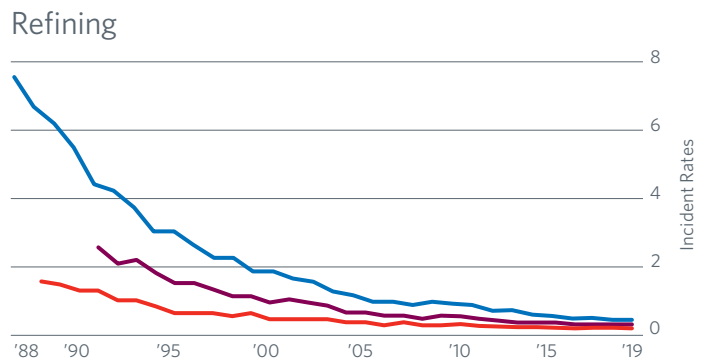
# Occupational Safety

Occupational Safety is about protecting the safety, health and welfare of workers. Occupational safety training focuses on preventing injuries and can include teaching workers proper lifting techniques, recognizing and avoiding hazards, and recommending good industrial hygiene and procedures for working safely. AFPM members work with OSHA to achieve the highest level of safety possible and constantly strive to improve workplace safety.

- **Incident Classification Data Collection** records and analyzes member companies' actual, high potential and near-miss incident data to identify and target opportunities for industrywide improvement. This information is developed into tools to help facilities improve their performance. Companies voluntarily provide this data to enhance safety throughout the industry.
- **Occupational Safety Programs** consists of six Occupational Safety Regional Networks that allow occupational safety professionals from our facilities to share information including safety lessons learned and practices to improve overall safety performance of the industries.

## Injury & Illness Incident Rates Radically Reduced Injuries Past 30 Years<sup>14</sup>

- Total Recordable Incident Rate
- Days Away, Restricted, or Transfer Rate
- Fatality and Days Away Rate



# Advancing Safety Through Industry Collaboration

At AFPM, our mission is to help our member companies continually improve safety. We do this by providing a vast array of resources to improve occupational and process safety performance, including safety bulletins, training resources, and hazard identification and practice share documents that are used to enhance in-person and virtual training classes, and knowledge-sharing programs.

## Advancing Process Safety Programs

Advancing Process Safety (APS) is voluntary and is AFPM's flagship program. This groundbreaking program was developed to promote collaboration across industries and to continuously improve process safety through data collection and opportunities to share experiences and knowledge. Created in 2012 to work toward perfect process safety at facilities the program has grown to include a suite of resources that encourage the sharing of information and best practices.

*AFPM's Advancing Process Safety Program consists of several programs:*

**Walk the Line (WTL)** is an employee training program that pulls together everyone from frontline employees to managers from facilities across the country to share information and work together to identify the root cause of plant accidents and find ways to prevent them from happening. The focus of this program is to ensure that workers know their roles and responsibilities and ensure that nothing is overlooked in key plant operations. WTL is continuously updating and recently transformed a training program into engaging and educational animated videos to expand the program and reach more engineers and frontline employees at our facilities.

The **Process Safety Regional Networks** allow process safety professionals from petroleum refinery and petrochemical facilities to share information to improve overall safety performance. There are six regional networks. Through responsible collaboration at the site and association level, facilities can benefit from sharing process safety learnings and practices.

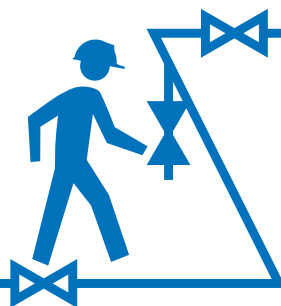
The **Process Safety Site Assessment Program** uses independent, third-party experts, or "assessors" to assist sites and industry to improve process safety. These assessors average over 40 years of industry experience and spend a week at a site to evaluate the quality of written programs and the effectiveness of operations. This program helps facilities prevent a process safety event.

**Hazard Identification/Practice Sharing Subgroup** allows the companies to confidentially identify and share industry hazards and then work together to establish practices to address them and improve process safety.

Through the **Mechanical Integrity Subgroup**, AFPM provides resources to help members better communicate across groups and improve their mechanical integrity programs, which are a key process safety program element. In 2020, the group developed and published a white paper on Integrity Operating Windows, something all members are working on.

The **Human Reliability Subgroup's** objective is to improve human performance in operations with information and tools that aid in reducing the likelihood and consequences of human errors.

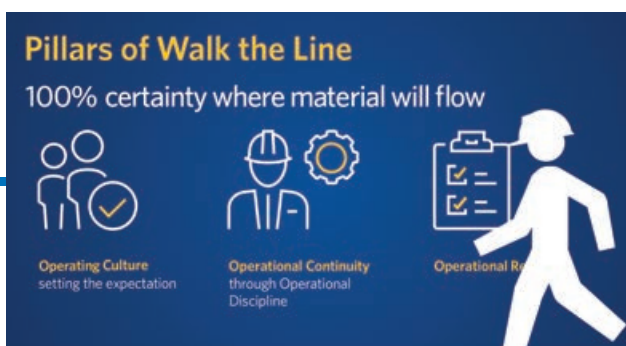
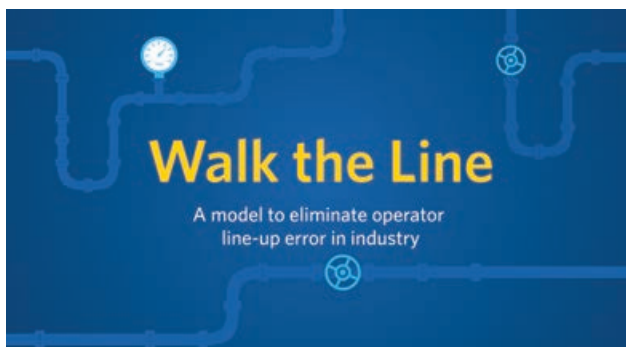
**Industry Learning & Outreach Group** produces industry data analysis, identifies opportunities for improvement for APS and conducts monthly industry APS webinars.





## Training & Immersive Learning Committee

The AFPM Training & Immersive Learning Committee shares knowledge around learning, as well as putting a focus on research and development of training tools using immersive and interactive technologies. This group developed the first AFPM virtual reality (VR) simulation, a complex training tool simulating the process for lighting a fired heater from a cold start. The VR simulation is accompanied by a two-dimensional simulation operated from a personal computer. In 2021 a Walk the Line 101 animated series and several What Good Looks Like micro-learning videos on several issues, including shift turnover, will be launched.



## Developing Tools for Alarm Rationalization

Alarms, visual and audible and similar to those in a car, tell operators that something in a facility needs to be addressed. Tools developed by members of AFPM's Operational Planning Control & Automation Technologies Committee (OPCAT) and the Advancing Process Safety team include instruction on recognizing and addressing potential hazards, sharing practices on alarm rationalization and benchmarking program metrics. These tools help operators respond safely and efficiently to abnormal process events and to share practical experiences that aid in the design, management, and implementation of alarm programs so they are meaningful and easy to understand.

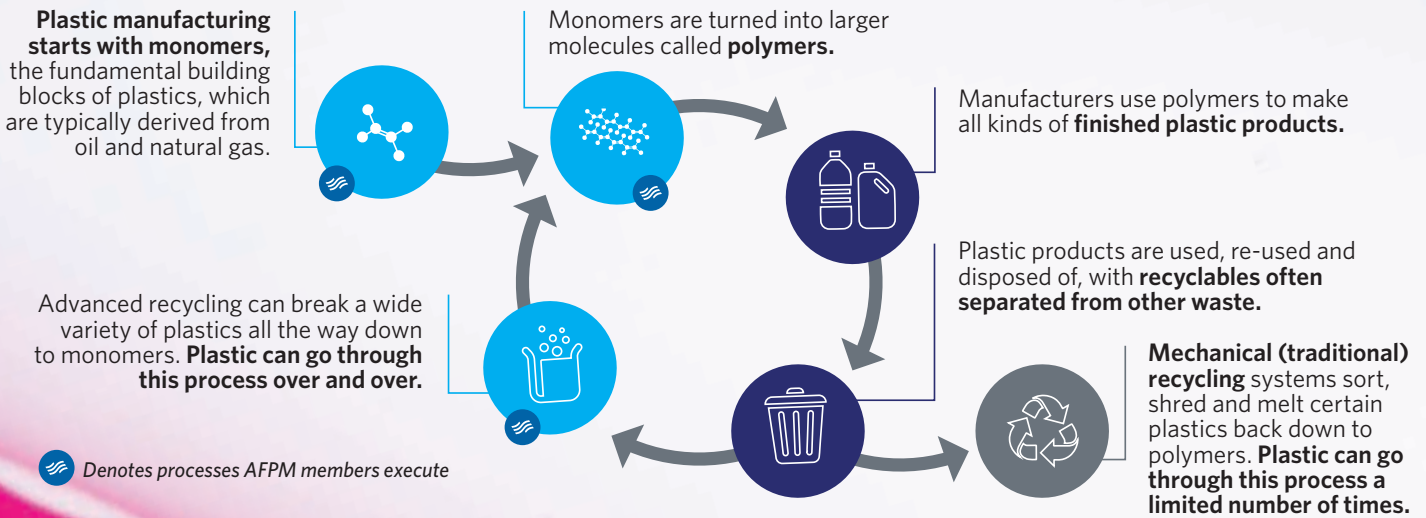
“ Alarm management programs help keep sites safe. These knowledge-sharing tools help engineers and operators better communicate and understand the “why” behind certain actions and bridge the gap from each perspective — from theoretical to real-life. By having open lines of communication, they will be able to continually improve the safety of the facilities.”

— Levi Merkel,  
Refinery Process Controls Engineer  
CHS, Inc.

# Finding Solutions To Our Biggest Challenges

Throughout our 150-year history, the fuel and petrochemicals industries have continually evolved to meet the world's changing needs and offer solutions to our most pressing problems. Today, our companies are driving innovation, bringing new products to market and finding new ways to do more with less to address issues like plastic waste management and climate change, among others.

## ADVANCED RECYCLING



## Putting plastic waste to good use

Today petrochemical manufacturers are working on improving and scaling cutting edge recycling technologies. "Advanced" recycling, which includes "chemical" and "molecular" recycling, will be key to reducing waste and giving new life to plastic products — including many single-use plastic products.



**Chevron Phillips Chemical** recently announced success in its first commercial scale production of polyethylene using advanced recycling technology. The company received ISCC PLUS certification and is now working on scaling up its production of this circular polyethylene to meet its ambitious plan to produce 1 billion pounds of the product annually by 2030.

**Dow** signed a deal in 2020 to buy recycled polyethylene pellets from **Avangard Innovative (AI)**, a Houston-based waste-optimization specialist. This enables Dow to provide recycled content plastic to its North American customers. "This collaboration combines AI's waste collection and sortation technology with Dow's materials science expertise, application expertise, and operational scale," said a Dow Chemical representative.

In Illinois, **INEOS** and **AmSty** are constructing a joint 100-ton-per-day facility that can recycle discarded single-use items like foam cups and yogurt containers made of previously difficult-to-recycle materials. And they will bring it all back at the same level of purity and performance without ending up in a landfill.

**Eastman Chemical** has developed carbon renewal technology, or CRT, which breaks down waste plastic feedstocks into carbon molecules, like a 3-D printer in reverse. Then, just like carbon in a 3-D printer, that former waste material can become an infinite number of new products. Through this process there is no degradation of quality so it can be used repeatedly.

## Bringing Low Carbon Fuels to Market

Refiners are increasingly expanding their product lines to help meet the demand for lower carbon fuels. AFPM refining members have long been among the top biofuels producers in the country and are increasingly investing in renewable diesel production.



Renewable diesel — produced using sources including vegetable oil and grease from restaurants — can reduce GHG emissions in transportation fuel by up to 80 percent without requiring consumers and businesses to invest in expensive new vehicles. Refiners are spending nearly \$2 billion to enable production of renewable diesel, and the industry could produce more than 5 billion gallons by 2024.<sup>15</sup>

In 2021, **Valero Energy**, through its joint venture with **Diamond Green Diesel**, will produce 675 million gallons of renewable diesel, which is 100 percent compatible with existing engines and infrastructure. This will make Valero the largest producer of renewable diesel in the United States, utilizing recycled animal fats, used cooking oil and inedible corn oil to produce low-carbon intensity renewable diesel fuel.

**Phillips 66** is also taking a significant step with Rodeo Renewed to support demand for renewable fuels and help California meet its low carbon objectives. The product will reconfigure its Rodeo refinery to produce 800 million gallons per year of renewable diesel, renewable gasoline and sustainable jet fuel from used cooking oils, fats, greases and soybean oils.

And many other refiners including Marathon Petroleum, HollyFrontier Corporation, CVR Energy and Delek US have also announced plans to convert existing facilities into renewable diesel.

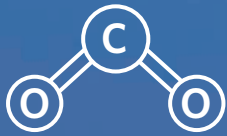


U.S. renewable diesel production rose **13%** in the first half of 2020 and is expected to exceed **5 billion gallons** by 2024.<sup>16</sup>



## Driving Progress in Emissions Reduction

Refiners and petrochemical manufacturers are driving progress in reducing GHG emissions in a variety of ways including investing in breakthrough technologies, carbon capture, sequestration and utilization, and increasing renewable power generation at their facilities, for example.



**Valero Energy's** Port Arthur refinery became the first industrial site in the U.S. to host a large-scale carbon capture project, and it remains the only U.S. refinery doing so, with more than 1 million tons captured each year. Carbon capture technology recovers carbon dioxide that otherwise would go into the atmosphere. The company also built a wind farm with 33 turbines at their McKee refinery, which is capable of running the entire facility under optimal wind conditions.



In the past few years, a team at **ExxonMobil** has developed novel materials, liquid separation membranes, and gas-treating technologies that can achieve significant GHG reductions. One example is Celestia™, a breakthrough catalyst that can help refiners efficiently remove sulfur and other impurities from diesel, an essential fuel for commercial transportation, while using less energy and creating fewer emissions.



**Marathon Petroleum** uses wind power at its Harpster, Ohio, pipeline pump station, in 2019 the turbine generated nearly a third of the station's electricity. The company also uses solar power at another terminal in Ohio to aerate their stormwater ponds to keep them healthy and compliant with Clean Water Act Requirements.



# Providing Career Opportunities

The refining and petrochemical manufacturing industries support more than 3.5 million highly skilled, well-paying jobs nationwide, with compensation that is roughly two to three times that of the average U.S. worker. And our employees say these jobs are longer lasting, with better health and pension benefits, and provide better pay than jobs in other industries within the energy sector.

We employ individuals of all education levels from all walks of life and with varying backgrounds. Our people are welders, engineers, chemists, cyber security specialists, skilled tradespeople, and everything in between. And, we are proud of the global impact our employees have by using their skills to create products that improve mobility, healthcare, safety, technology, and life in general.

“The economic impact of the refining and petrochemical manufacturing industries is far-reaching. Each job in the refining industry supports more than 30 additional jobs across the local and regional economies in which refineries operate, and each petrochemical manufacturing job supports 20 additional jobs. These jobs include engineers, analysts, accountants and retail workers who provide goods and services to the companies and employees in the refining and petrochemical manufacturing sectors, jobs made possible by those industries.”

—Susan Grissom, AFPM Chief Industry Analyst

\$225,000

Average refining industry worker total compensation<sup>17</sup>

\$149,000

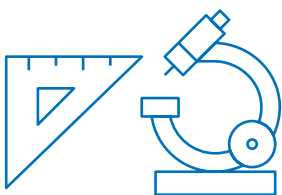
Average petrochemical industry worker total compensation<sup>18</sup>

## Fostering a Diverse and Inclusive Workplace

Our companies recognize that diversity and inclusion in the workforce will help foster creativity and drive the innovation critical to the next generation of the refining and petrochemical industries. Companies are implementing recruitment strategies to attract talent from traditionally under-represented groups and cultivating career opportunities and advancement in the workplace so that our workforce is more equitable and truly reflective of the population. Efforts extend beyond headquarters and fence lines as companies provide financial support and resources to academic and occupational programs, and scholarships designed to reduce barriers.

Scholarships are becoming increasingly important to help offset the cost of a college education. **Valero Energy** has a number of scholarship programs providing financial support to minority students pursuing a degree in engineering.

Each year, **Valero Energy** awards scholarships to talented college freshman, presenting the financial aid at the company's Minority Engineering Summit that includes interaction with the company's leadership as a first step for a potential internship during their junior or senior year of college. They also work through the National Society of Black Engineers to provide scholarships to students from Texas A&M, University of Texas San Antonio, and Louisiana State University.



Inclusivity, diversity, and teamwork have been cornerstone values since **Monroe Energy's** inception. Through their Diversity, Equity & Inclusion Council (DE&I Council) and the She Leads Resource Group, Monroe continues to strengthen their culture through education and active participation in these efforts. The DE&I Council focuses even greater attention on inclusivity, innovation, and creativity by accelerating the evolution of the Monroe "refining" culture into one that better attracts, develops, and retains more diverse employees as well as continually enriches these values within their existing team. The She Leads Resource Group works to empower women to reach their full potential to succeed and progress professionally and personally. While these entities are mainly inwardly focused, Monroe continues to pursue new outreach programs and support existing efforts to expand upon the positive impact that they make in their community. For example, Monroe Energy team members are actively involved with free STEM tutoring of local students, and Monroe regularly sponsors various community programs and provides scholarships focused on supporting equity improvement and inclusion in their communities.



Through AFPM's Women in Industry Working Group a strong focus is placed on empowering women in our industries by helping them develop professional goals, create networking and mentoring opportunities, and providing training and skills development. This group allows members to take advantage of opportunities to engage, connect and learn from industry leaders.

## Preparing Tomorrow's Workforce

Our industries are focused on providing many opportunities through training, internships and apprenticeships to prepare people from diverse backgrounds to enter the workforce. We are also developing the next generation of our workforce through investments in STEM education for children in communities across the country.

The refining and petrochemical industries like others in manufacturing face workforce gaps as the Baby Boomer generation retires. Demand for employees is growing, which is why our industries made a concerted effort over a decade ago to invest in strong internship and apprenticeship programs.

**Shyam Laxmidas**  
Superintendent,  
Chevron Phillips  
Chemical (CP Chem)



Students know the value of internships, but so do our companies. Shyam Laxmidas is a perfect example of how providing opportunities to students pays off for both parties for years to come.

Shyam, who was born in Zimbabwe, moved to the United States intending to go to medical school. Two internships at **Chevron Phillips Chemical (CP Chem)** changed his mind and ultimately landed him a career at the company. Ten years later, Shyam is the superintendent at the Clemens Terminal.

**Kyle Platt**  
Technician,  
INEOS



Back in 2005, **INEOS** recognized that many job applicants did not have the technological skillset that was needed. INEOS and several other companies in the area partnered with a community college in Texas City to create a curriculum designed to teach the skillset needed for millwrights to be able to repair today's more technologically advanced equipment. The best students were offered a three-year overlapping apprenticeship program that gave them real world experience. Kyle Platt went from candidate to apprentice to employee and now he is a top INEOS technician training new apprentices at the company.

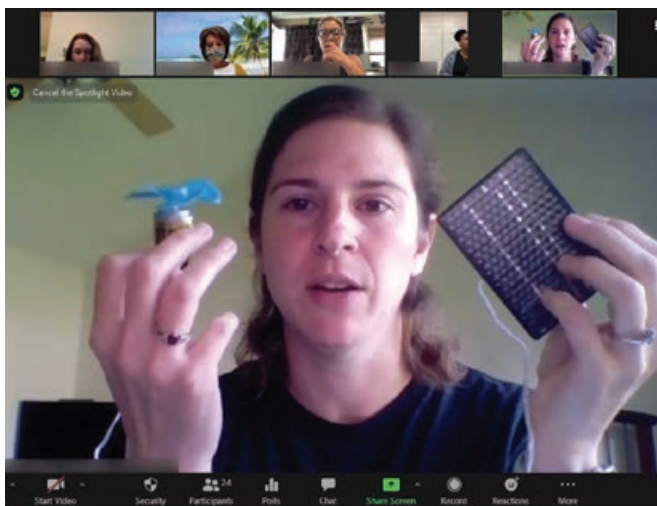
"What really sold me first and foremost was the safety culture. When you realize, even as an intern working in a chemical plant and recognizing the types of hazards that we work with and the culture that the company had with regards to safety was very impressive.

We have such a diverse workforce at CP Chem. Each individual has different experiences and different ways of solving different things and we encourage that type of culture within our company."

— Shyam Laxmidas, Chevron Phillips Chemical (CP Chem)

"Being selected for the apprenticeship program was life changing. It was one of those moments when you tell your parents, and they start crying. During my apprenticeship I received a salary and benefits and by the time I hit 25, I was making six figures. I was not mechanically inclined before starting at INEOS, but I had the desire and ambition. And the skills that I have learned make me employable for the rest of my life."

— Kyle Platt, INEOS



## Investing in STEM Education

Companies recognize that education is important not only to their communities, but ultimately to their workforce needs. Refining and petrochemical facilities have evolved to highly complex facilities and companies are actively pursuing technologies that improve efficiencies and maximize sustainability. STEM education helps inspire our next generation of innovators.

**Chevron U.S.A.** worked with the nonprofit STEM NOLA and UBTECH to ensure that students continued to have access to STEM education during the summer of 2020. Chevron funded 175 scholarships for Camp: ASPIRE (At-Home Summer Programs in Robotics and Engineering), which offered children ages 8-16 robotics kits, virtual learning from STEM educators, and at-home activities to keep them interested in STEM while school was out.

**Valero Energy** supports local STEM programs across the country. In Louisiana, the company supports Electric Girls, an organization that reaches hundreds of girls between the ages of 5 and 18 in the greater New Orleans area through summer camps, school partnerships, and Saturday programs. This organization develops leadership skills in young girls through their learning of electronics and computer programming skills. Valero also supports Girls in STEM at Tulane (GiST), which provides fifth through seventh grade girls with the opportunity to meet and work with women role models in STEM fields. Workshops developed and offered by Tulane faculty and Tulane student teams encourage and empower girls to inquire, investigate, and discover in a positive environment.

Once COVID-19 shutdowns began, **Phillips 66** worked in partnership with the NEED Project to ensure that they still had a way to reach teachers and students and offer valuable learning opportunities. By the end of the year, the company sponsored over 20 virtual energy education workshops for science teachers across the country. The workshops included lessons and science experiments on emerging issues like robotics that can be used with students from elementary through high school. The workshops reached more than 300 teachers, throughout 30 states and close to 200 cities. The student impact is expected to reach more than 40,000 students.

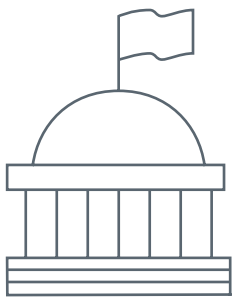


STEM disciplines can be used in many imaginative ways, but one of the most original is the ZOOMS STEM Design Challenge that asks students to solve real problems zookeepers face at the Minnesota Zoo. Presented by **Flint Hills Resources** in partnership with the Minnesota Zoo, third through twelfth graders are challenged to use STEM skills, problem solving, and creativity to enrich the lives of animals in the zoo's care. Sea otters, monkeys, moose, and red pandas have all been the lucky recipients of this program that is guaranteed to foster interest in STEM and the numerous ways it can be applied to an exciting career.

# Supporting Our Communities

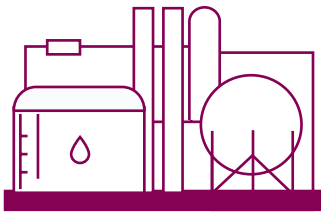
Our companies and our people are active contributors to their communities. Refiners and petrochemical manufacturers contribute more than \$60 billion in state and local taxes and more than \$70 billion to the U.S. economy through federal taxes annually. And, they support their communities in myriad other ways.

AFPM members and their employees serve as volunteer firefighters, mentor in local schools, protect wildlife habitats, and engineer novel solutions to our most pressing problems. These companies forge strong partnerships with local leaders, first responders, community organizations and fence line neighbors through open and transparent communication, financial investments, and volunteerism in the communities in which they operate.



U.S. refiners and petrochemical manufacturers contributed over **\$130 billion** in federal, state and local taxes<sup>19</sup>

## Fostering Open and Transparent Relationships with Our Communities



**Operations at a refining or petrochemical facility can seem daunting to those who are unfamiliar with the work done inside. That is why AFPM member companies understand the importance of transparency and being good neighbors. Although the process may differ, the goal is the same, a respectful connectivity with their community driven by an open and ongoing dialogue. For some facilities, this communication with residents, community leaders, and community-based organizations is fostered by longstanding relationships, while other facilities work through formal Community Advisory Panels (CAP).**

Sometimes connecting the dots between what is going on behind the fenceline with things they use in their everyday lives helps people understand the role of our products. A **BASF** facility in Michigan routinely takes time during CAP meetings to show an end-use product like the Adidas Boost shoe and a thermoplastic polyurethane (TPU) product that it manufacturers using benzene or toluene. The cushion and bounce you value as a runner are thanks to petrochemical building blocks.

**Marathon Petroleum** has honed the ability to address some community concerns in a quick and satisfactory manner. Most recently at the onset of COVID-19, nearby residents to its Minnesota facility were concerned about what they perceived to be increased noise generated from the refinery. While in reality there was no additional noise coming from the facility, they were responsive to the changing needs of the community and within 48 hours the refinery restricted certain operations to certain days and times and introduced a new system to monitor noise levels.

## Investing in Our Communities

The refining and petrochemical industries have a culture of giving back that extends from companies' headquarters to the communities where their facilities have deep roots. We actively help local communities through hundreds of millions of dollars in charitable donations and thousands of volunteer hours to local civic, health, and human services, and to educational and environmental organizations and programs.

Our industries have strong connections with emergency and first responders providing financial support, new and used equipment, and often manpower as many companies have employees that serve as volunteer fire and rescue personnel in their community.

A grant to the Menlo Fire Department in Iowa made by **Flint Hills Resources** helped to purchase an industrial-grade rescue saw used in response to vehicle crashes, building collapses and farm equipment accidents.

In Wisconsin, a financial donation from **Husky Energy** allowed the Superior Fire Department to purchase new ice rescue suits, replacing previous ones that in some cases leaked.

**LyondellBasell Industries** in Texas has donated air monitors for sheriffs' vests and extractors to remove carcinogens from equipment and clothing after a rescue.



Companies have committed financial and volunteer support to improving neighborhoods in need. **BASF** is one example of giving financial aid and manpower to Life Remodeled, a nonprofit organization dedicated to cleaning up neighborhoods and renovating schools in low-income communities in the Detroit area.



**Phillips 66** came to the assistance of a community located in an industrial area in Linden, New Jersey, impacted by flooding during and after Hurricane Sandy. The company donated to flood plain restoration project led by Rutgers University and the City of Linden to build a rain garden to help alleviate future flooding in the Tremley Point neighborhood.



Companies are placing a major emphasis on environmental protection through community partnerships and programs, facility stewardship, and philanthropic giving. **Flint Hills Resources** is funding Project Clean Air Repairs, a government and private industry partnership in Minnesota to repair free-of-charge emissions control systems in older cars and trucks, typically responsible for 90 percent of emissions.

## Meeting Critical Needs During COVID-19

U.S. refiners and petrochemical manufacturers quickly mobilized to meet the growing needs of their communities. These companies donated vital goods like PPE and gas cards to first responders, nonprofits, and other essential workers. They donated to food pantries and blood banks, and provided equipment like computers and Kindles that enabled more students to successfully participate in virtual learning.



## Providing Meals for Communities in Need

As weeks turned into months, job losses mounted and people turned to community services for help. The pandemic quickly taxed food banks and some faced potential shutdown because of dwindling supplies. AFPM members helped fill the gap between resources and growing needs in their communities.

**Phillips 66** donated \$1 million to 48 local food banks across the U.S. and in the U.K., with \$200,000 going to five organizations in Houston. The donations are on top of the \$500,000 donated by Phillips 66 to the Houston Food Bank earlier this year.

The **Flint Hills Resources** Pine Bend refinery supported their local community by donating thousands of dollars in gas gift cards to a nonprofit that partners with more than 1,000 food banks to help them distribute 10,000 emergency food boxes to low-income families.

**LyondellBasell Industries** donated \$1.3 million to support the COVID-19 response efforts of the Global FoodBanking Network and United States local food banks.

## Easing the Burden of At-Home Learning

The impacts of the pandemic and at-home learning on children have been far-reaching. As industries that place a high value on family and education, refiners and petrochemical producers stepped in to help ease the burden of the sudden shift to virtual learning.

**Valero Energy** donated \$100,000 to the Southeast Texas Food Bank to fund the Port Arthur Independent School District Backpack Program, which gives students a backpack of food on Fridays to ensure they have food throughout the weekend.

An often-unrealized byproduct of widespread virtual learning is the need to replace meals provided for low-income children at school. **Marathon Petroleum's** Canton refinery employees raised more than \$36,000 — which was matched 100 percent by the Marathon Foundation — for a total gift of \$73,000 for the Stark County Hunger Task Force's Backpack Program.

**Motiva Enterprises** donated 500 refurbished laptops to Comp-U-Dopt, a nonprofit that provides technology to underserved students in the Houston and Galveston areas.

**CITGO** partnered with the Harris County Sheriff's Office to donate 150 Kindles to help low-income students in the Houston and Alief Independent School Districts meet their e-learning needs.

“The pandemic has disrupted various facets of our lives and millions of people, many who have not needed relief before, are depending on our food banking organizations to keep food on the table. LyondellBasell's support will help ease the strain food banks are currently feeling and help us reach more people facing hunger during this difficult time.”

— Lisa Moon, President and CEO  
The Global FoodBanking Network



# Thank You

## Front Line, Essential Workers & Volunteers



### Helping Frontline Workers

As the nation paused in March 2020, demands on first responders escalated and they answered despite great uncertainty about the spread of COVID-19 and the undoubted risk that the virus posed for those on the frontline. And our companies committed to help lessen the pressure.

**Valero, Motiva, and Chevron** donated millions of dollars in gasoline and gift cards to nonprofits, and medical and emergency response organizations in across multiple states.

**SABIC** donated **\$500,000 of products** made at its facilities in North and South America. Products include approximately 70,000 face shields that were distributed to healthcare workers and first responders throughout the Americas.

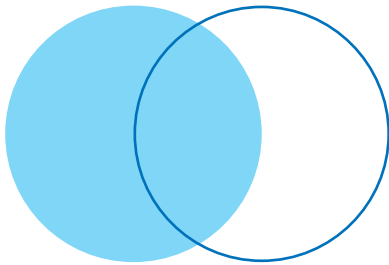
**Chevron-funded Fab Labs** that provides a suite of digital fabrication and rapid prototyping machines, including 3-D printers, **began producing PPE for first responders and health organizations** in communities near Chevron's U.S. facilities, with a goal of producing over 20,000 face shields for local hospitals, nursing homes and first responders.

**Eastman Chemical** produced and donated **PETG** — a copolyester used for medical devices including face shields — to universities in Tennessee and to Purdue University in Indiana. The rolls of PETG film will be used to produce 10,000 face shields in Tennessee and 3,000 protective lenses and 4,000 face shields in Indiana.

As a part of its effort to help create a reusable face mask, **ExxonMobil** donated **polypropylene** to the Nonwovens Institute at North Carolina State University for use in making the replaceable filtration cartridges for the masks.

# Promoting Policies That Power Progress

The United States needs policies that promote growth and investment in the refining and petrochemical manufacturing industries to help drive our economy, add jobs, increase energy security and remain competitive in a global economy. These policies must:



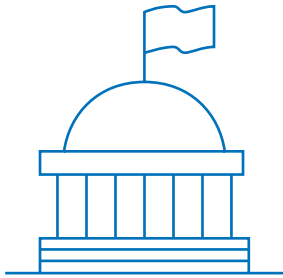
## Enhance Transparency

The future of American manufacturing requires reasonable and cost-effective regulations. AFPM supports regulatory reform that enhances transparency, accountability and efficacy of federal regulations based in sound science.



## Promote Competition

AFPM welcomes free-market competition to stimulate innovation and develop new technology. Policymakers must ensure that trade rules are fair and that the full potential of the modernized U.S. tax code can be realized to spur growth now and into the future.



## Strengthen Our Foundation

The global gains of the U.S. refining and petrochemical industries cannot be maintained or built upon unless our nation's infrastructure keeps pace. AFPM supports investment in critical infrastructure, including roads, pipelines, rail, inland waterways and ports, which are key to accessing and expanding the use of U.S. resources.



## Acknowledge the Role of Our Industries in a Sustainable Future

AFPM is committed to the development of sound policies that enable our members to supply the fuel and petrochemicals that growing global populations and economies need to thrive, and to do so in an environmentally sustainable way.

# Addressing Climate Change

**AFPM is committed to developing policies that address climate change. Such policies must be:**

**Policies addressing climate change must be:**

- Balanced and measured to improve quality of life, ensuring the long-term economic, energy, and environmental needs of humanity are met;
- Protective of U.S. competitiveness and prevent the shifting of production, jobs, and emissions from the United States to other countries;
- Harmonized, preemptive, and economy-wide;
- Simple and transparent; and
- Achievable and flexible to adjust as necessary.

**AFPM and our members are further committed to:**

- Delivering affordable, reliable fuel and petrochemicals products that lift the standards of living for people all over the world;
- Improving the efficiency and sustainability of our operations;
- Offering fuels and petrochemicals that make engines and other products more efficient; and
- Continuing research, innovation, and application of new technologies and products.

## **Advocating for More Sustainable Transportation**

AFPM members are leading the effort to transition the U.S. to high-octane gasoline through a nationwide high-octane, 95-RON fuel standard that would meet the most stringent air quality standards in every state, including California. Doing so would deliver emissions reductions equivalent to taking hundreds of thousands of cars off the road each year. When used in the next generation of low CO<sub>2</sub>-emitting gasoline engines, the high-octane, 95-RON fuel would allow vehicles to travel farther on each tank of gas, less expensively than other options.

# AFPM Executive Committee



**AFPM Chairman of the Board**  
**Mr. Jeff Ramsey**  
President and Chief Executive Officer  
Flint Hills Resources, LLC  
Wichita, Kansas



**AFPM Treasurer**  
**Mr. Graeme Burnett**  
Chairman of the Board  
Monroe Energy, LLC  
Trainer, Pennsylvania



**Mr. Brian Coffman**  
President and  
Chief Executive Officer  
Motiva Enterprises, LLC  
Houston, Texas



**AFPM Vice Chairman**  
**Mr. Robert A. Herman**  
Executive Vice President, Refining  
Phillips 66  
Houston, Texas



**AFPM Past Chairman of the Board**  
**Mr. Joseph W. Gorder**  
Chairman and  
Chief Executive Officer  
Valero Energy Corporation  
San Antonio, Texas



**Mr. Michael Coyle**  
President, Manufacturing  
Chevron U.S.A. Inc.  
San Ramon, California



**Mr. Matt Crocker**  
Senior Vice President, Fuels  
ExxonMobil Fuels and  
Lubricants Company  
Spring, Texas



**Mr. Mike Hennigan**  
 President and  
 Chief Executive Officer  
 Marathon Petroleum Corporation  
 Findlay, Ohio



**Mr. Mike Nagle**  
 President & Chief Executive Officer  
 INEOS Olefins & Polymers USA  
 League City, Texas



**Mr. Matt Smorch**  
 President and Chief Executive Officer  
 CountryMark  
 Indianapolis, Indiana



**Mr. Mike Jennings**  
 Chief Executive Officer and President  
 HollyFrontier Corporation  
 Dallas, Texas



**Mr. Thomas J. Nimbley**  
 Chairman and Chief Executive Officer  
 PBF Energy, Inc.  
 Parsippany, New Jersey



**AFPM Associate Liaison**  
**Mr. Stephen M Toups**  
 President  
 Turner Industries Group, LLC  
 Baton Rouge, Louisiana



**Mr. Mark Lashier**  
 President &  
 Chief Executive Officer  
 Chevron Phillips Chemical  
 Company LP  
 The Woodlands, Texas



**Mr. Torkel Rhenman**  
 Executive Vice President,  
 Global Intermediates and  
 Derivatives, and Refining  
 LyondellBasell Industries  
 Houston, Texas

## Board of Directors

AFPM is governed by a Board of Directors, comprised of representatives from each of our regular members. When the Board is not in session, it delegates authority to the AFPM Executive Committee to render judgments and govern the Association. The Board of Directors elects a chairman, seven vice presidents and a treasurer who, together with the immediate past chairman, comprise the Executive Committee. The Board also elects a president to serve as chief administrative officer of the Washington-D.C.-based staff and the headquarters office.

Albemarle Corporation

**Raphael Crawford**

Chevron Phillips Chemical Company LP

**Mark Lashier**

Dow

**Keith Cleason**

American Refining Group, Inc.

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Our industries make life better, safer, healthier, and most of all, possible.



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# Information Resources

## Communications

Through a combination of traditional and social media outlets, AFPM reaches the press, policymakers, and the public to educate them on the facts about our industries' work and value, and to inform member company employees about important issues impacting the industries.



## Publications

AFPM publications inform our members about industry statistics, technical innovations, environment and safety developments, security, and many other relevant issues.

AFPM's online store allows you to search technical papers and reports by keyword, author, and/or meeting and directly download to your computer. Learn more at [afpm.org/publications](http://afpm.org/publications).

### Newsletters and General Publications

- Annual Report
- Daily Alert
- Energy in Motion – The AFPM Transportation & Infrastructure Newsletter
- Fuel Line
- Green Room Report
- Security Watch
- Sustainability Report
- Tech Update

### Statistics

- Annual Survey of Occupational Injuries & Illnesses
- Process Safety Event Report
- AFPM U.S. Refining & Storage Capacity Report

### Petrochemical Statistics Program Subscriptions

- AFPM Petrochemical Surveys, Production & Inventory Statistics – quarterly
- AFPM Selected Petrochemical Statistics U.S. Trade Data – monthly

### Technical Papers

- Annual Meeting Papers
- Cybersecurity Conference Papers
- Environmental Conference Papers
- International Base Oils & Waxes Conferences Papers
- National Occupational & Process Safety Conference Exhibition Papers
- Operational Planning Control and Automation Technologies Conference Papers (2019 and previous)
- Reliability & Maintenance Conference Papers (2019 and previous)

### Transcripts

Operations & Process Technology Summit, formerly Q&A (2019 and previous)

\* Publications are distributed to members only.

# Standing Committees and Working Groups

The AFPM Board of Directors relies on the counsel and support of experts among its membership to accomplish specific Association functions and plan for the Association's future. There are 23 standing committees and subcommittees that serve to assist the Board in achieving AFPM's goals.

The **Associate Steering Committee** provides a forum for the Association's contractors, suppliers, vendors, and consultants, to communicate with the Board of Directors on items of mutual interest and support.

Chair: Stephen Touns, Turner Industries Group, LLC  
AFPM Secretary: Susan Yashinskie

---

The **Base Oils & Waxes Committee** provides oversight and assistance on matters related to automotive oils, base oils and waxes.

Chair: Scott Flathouse, Phillips 66  
Chair: Ross Reucassel, The International Group, Inc.  
AFPM Secretary: Tanya Cooper

---

The **Communications Committee** shares information, ideas and communications strategies to increase support by external audiences for policy positions established by the Executive Committee and adopted by the AFPM Board.

Chair: Jake Reint, Flint Hills Resources, LLC  
AFPM Secretary: Jaime Zarraby

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The **Cybersecurity Committee** provides information and recommendations on matters pertaining to cybersecurity and cyber threats.

Chair: Blake Larson, Sinclair Oil Corporation  
AFPM Secretary: Maggie O'Connell

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The **Environmental Committee** provides a forum for members to exchange views and discuss environmental activities and advises the AFPM Board and staff on current environmental laws and regulations.

Chair: Christopher Drechsel, Marathon Petroleum Corporation  
AFPM Secretary: David Friedman

---

The **Fuels Committee** provides information and policy recommendations concerning legislative, regulatory and motor fuel specification developments.

Chair: Scott Roginske, CHS Inc.  
AFPM Secretary: Tim Hogan

---

The **Government Relations Committee** serves as the principal forum for sharing information, ideas and strategies on legislative and regulatory issues important to the refining and petrochemical industries.

Chair: Salo Zelermyer, Valero Energy Corporation  
AFPM Secretary: Geoff Moody

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The **Immersive Learning Committee** provides a forum for the exchange of information on learning, as well as research and development of training tools and solutions that utilize existing and emerging technologies to enhance member training programs.

Chair: Bjorn Olson, Flint Hills Resources, LLC  
AFPM Secretary: Danny Forest

---

The **Issues Committee** advises the Executive Committee and provides direction and guidance to AFPM staff on current policy issues important to the refining and petrochemical industries.

Chair: Jeff Ramsey, Flint Hills Resources, LLC  
AFPM Secretary: Geoff Moody

Please visit the AFPM website for a complete description of all committees and their rosters at [www.afpm.org/committees](http://www.afpm.org/committees).

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The **Labor Relations & Human Resources Committee**

facilitates the exchange of information on matters related to industrial and labor relations, human resources practices and collective bargaining.

Chair: Terrence Martin, Phillips 66

AFPM Secretary: Adam Ali

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The **Legal Committee** recommends litigation strategies to advance the interests of AFPM's members and the industries. The Committee also provides guidance to the AFPM staff on legislative and regulatory proposals and general legal issues affecting the industry.

Chair: Richard Walsh, Valero Energy Corporation

AFPM Secretary: Rich Moskowitz

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The **Manufacturing Committee** provides technical support and recommendations on matters that affect facility operations and products including federal, state and local laws and regulations.

Chair: Sharon Watkins, Monroe Energy, LLC

AFPM Secretary: Gordon Robertson

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The **Operational Planning Control & Automation Technologies Committee** focuses on sharing practical experience with the application management, and integration of computing technology in areas including process control and automation, modeling, real-time optimization and Internet-based applications.

Chair: Atique Malik, Phillips 66

AFPM Secretary: Alyse Keller

---

The **Petrochemical Committee** advises the AFPM Board and staff on current issues of importance to the petrochemical industry.

Chair: Mary Kurian, BASF Corporation

AFPM Secretary: Rob Benedict

---

The **Petrochemical Statistics Subcommittee** advises and assists the Petrochemical Committee and AFPM staff on matters pertaining to the collection and dissemination of statistics on petrochemicals, including trade, production and inventories.

Chair: Georgina Goodnight, Chevron Phillips Chemical Company LP

AFPM Secretary: Rose Sabijon

---

The **Reliability & Maintenance Committee** provides information and advice on issues related to process plant reliability, maintenance practices, mechanical integrity and workforce issues. The Committee promotes the exchange of technical information and proven practices on reliability, maintenance, inspection, procurement, project engineering, and turnarounds through the annual AFPM Summit.

Chair: Hardy Kemp, Flint Hills Resources, LLC

AFPM Secretary: Gordon Robertson

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The **Security Committee** provides a forum for the exchange of information among the membership on security-related issues within the petroleum refining and petrochemical manufacturing industries.

Chair: Jeff Culver, Koch Industries, Inc.

AFPM Secretary: Jeff Gunnulfsen

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# Standing Committees and Working Groups

continued

The **State & Local Outreach Committee's** purpose is to discuss state-level legislative and regulatory issues of importance to AFPM's refining and petrochemical members. The Committee will advocate for AFPM policies at the state and local levels, as directed by the Issues Committee.

Chair: Calli Daly, Koch Industries, Inc.

AFPM Secretary: Don Thoren

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The **Sustainability Working Group** provides a forum for discussing how the fuel and petrochemical industries are advancing sustainability today and contributing to a sustainable future through environmental stewardship, the advancement of health and safety, helping people and communities thrive, and driving progress both within our industries and in sectors across the economy.

AFPM Secretary: Jaime Zarraby

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The **Tax Policy Committee** provides analysis and recommendations on tax-related legislation and engages in regulatory matters at the U.S. Treasury Department and Internal Revenue Service.

Chair: Nicole Busey, Marathon Petroleum Corporation

AFPM Secretary: Justin Sykes

---

The **Transportation, Infrastructure & Midstream Committee** analyzes policy, regulations and guidance relating to the transportation of oil, natural gas, and the products derived from these critical resources, as well as other transportation and infrastructure issues that may arise.

Chair: Cindy Bond, Phillips 66

AFPM Secretary: Rob Benedict

The **Women in Industry Working Group** focuses on empowering women in our industry by helping them develop professional goals, create networking and mentoring opportunities, and provides training and skills development. Members take advantage of opportunities to learn from industry leaders, engage and connect.

AFPM Secretary: Latoya Britt

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The **Workforce Development Network** directs and supports AFPM's Workforce Development Program. This network serves as a conduit for members and regional partners to share good practices and explore outreach opportunities to deliver the diverse and qualified workforce needed for the future.

AFPM Secretary: Adam Ali

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The **Safety & Health Committee** provides a forum for members to exchange views and share occupational and process safety best practices and developments in safety related legislation and regulation.

Chair: Willis Jernigan, Koch Industries, Inc.

AFPM Secretary: Danny Forest

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The **Industrial Hygiene Subcommittee** provides a forum for the exchange of information on industrial hygiene, regulatory and legislative trends and developments as well as other matters concerning industrial hygiene standards and practice.

Chair: Trevor Gillig, Marathon Petroleum Corporation

AFPM Secretary: Danny Forest



The **Occupational Safety Regional Network Leadership Subgroup** reports to the Safety & Health Committee on the AFPM occupational safety regional networks. In addition, the Subgroup highlights practices for inclusion in the Practice Sharing Program, topics for the National Safety Conference, and provides review for the Safety Innovation Award.  
Chair: Scott Willis, Phillips 66  
AFPM Secretary: Rebecca O'Donnell

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**Occupational Safety Regional Networks**  
AFPM Secretary: Rebecca O'Donnell

[Central States Regional Network](#)  
Chair: Scott Willis, Phillips 66

[East Coast/Mid-West Regional Network](#)  
Chair: Kendra Richins, Phillips 66

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[Rocky Mountain Regional Network](#)  
Chair: Dan Foster, Silver Eagle Refining, Inc.

[Texas Gulf Coast Network](#)  
Chair: Buster Keasler, LyondellBasell Industries

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The **Process Safety Advisory Group (PSAG)** provides leadership, support and guidance to Advancing Process Safety (APS) programs in an effort to promote process safety performance excellence across the Association's memberships.  
Chair: Mike Bukowski, Phillips 66  
AFPM Secretary: Lara Swett

The **Process Safety Workgroup** is responsible for implementing the direction and vision of the Process Safety Advisory Group by providing oversight and direction to the Advancing Process Safety Programs.  
Chair: Neil Faulkner, Phillips 66  
AFPM Secretary: Mawusi Bridges

---

**Identification & Practice Sharing**  
Chair: David Thompson, Koch Industries, Inc.  
AFPM Secretary: Mawusi Bridges

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**Industry Outreach and Learning**  
Chair: Shanahan Mondal, CVR Energy, Inc.  
AFPM Secretary: Mawusi Bridges

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**Process Safety Regional Networks**  
AFPM Secretary: Eileen Scherzinger

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**Walk the Line Subgroup**  
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AFPM Secretary: Alyse Keller

# 2021 Industry Meetings: Bringing Industry Meetings to You

Responding to the challenges presented by COVID-19, AFPM quickly adjusted its meetings to offer first-in-class virtual events that educate our members and other stakeholders on critical technical and advocacy issues, supporting the safety, security and success of the fuel and petrochemical industries.

Each of our events, being offered in a hybrid format to accommodate virtual and in-person audiences, is thoughtfully designed to provide state-of-the-industry information in a dynamic and interactive format that encourages connections between attendees, presenters and exhibitors.

**Annual Meeting**  
Grand Hyatt San Antonio  
San Antonio, TX  
April 11 - 13, 2021

**National Occupational & Process Safety Conference & Exhibition**  
Sheraton New Orleans  
New Orleans, LA  
August 23 - 25, 2021

**The Summit:  
Excellence in Plant Performance**  
Hyatt Regency New Orleans  
New Orleans, LA  
October 5 - 7, 2021

**Security Conference**  
Hyatt Regency  
New Orleans, LA  
October 5 - 6, 2021

**Labor Relations /  
Human Resources Conference**  
Hyatt Regency  
New Orleans, LA  
October 7 - 8, 2021

**Environmental Conference**  
Austin Marriott Downtown  
Austin, TX  
October 10 - 12, 2021

**International Petrochemical Conference**  
Grand Hyatt San Antonio  
San Antonio, TX  
October 17 - 19, 2021

**International Base Oils & Waxes Conference**  
Grand Hyatt San Antonio  
San Antonio, TX  
October 17 - 19, 2021





## Join AFPM Today!

The vast majority of American petroleum refiners and petrochemical manufacturers, along with hundreds of industry service companies, are currently members of AFPM.

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202.457.0480

[www.afpm.org/benefits-of-membership](http://www.afpm.org/benefits-of-membership)

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### Endnotes

- 1 U.S. Energy Information Administration
- 2 AFPM
- 3 IHS Markit
- 4 U.S. Energy Information Administration
- 5 Ibid.
- 6 Ibid.
- 7 Ibid.
- 8 ICIS Supply and Demand Database
- 9 AFPM
- 10 U.S. Environmental Protection Agency
- 11 U.S. Bureau of Labor Statistics
- 12 AFPM
- 13 AFPM, 2019 AFPM Process Safety Report
- 14 Ibid.
- 15 Baker & O'Brien
- 16 Environmental Protection Agency
- 17 IMPLAN 2018
- 18 Ibid.
- 19 Ibid.

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