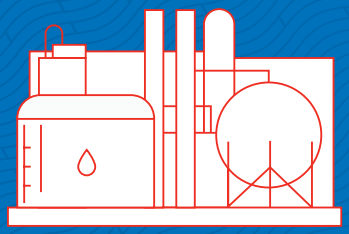
American Fuel & Petrochemical Manufacturers

AFPM

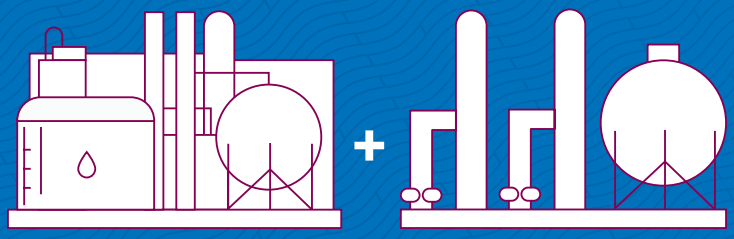
Driving Progress

2025 Annual Report

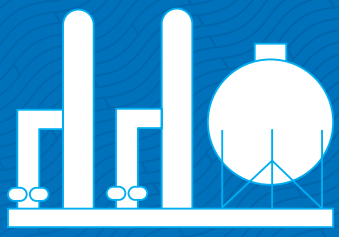
U.S. Refineries and Petrochemical Facilities



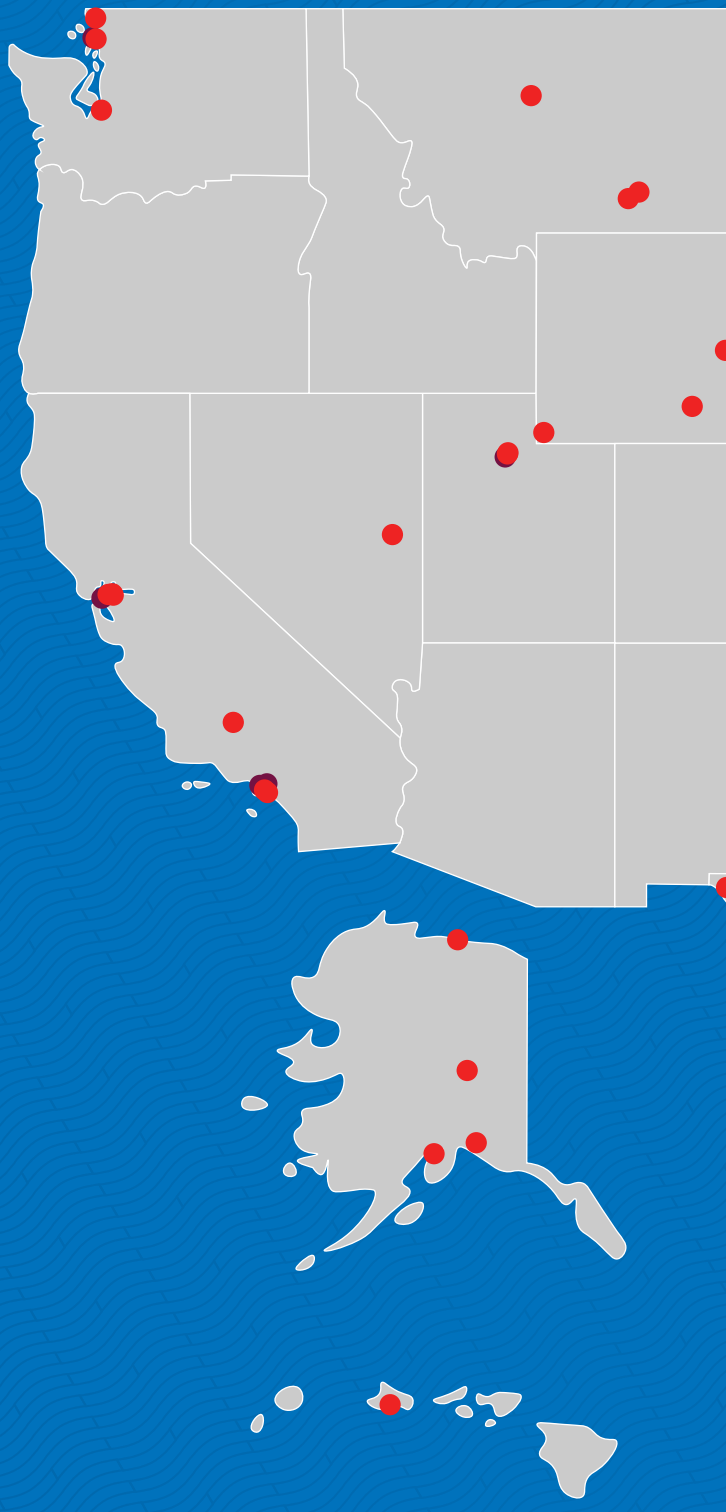
- **74** refineries produce gasoline, diesel, jet fuel and other products



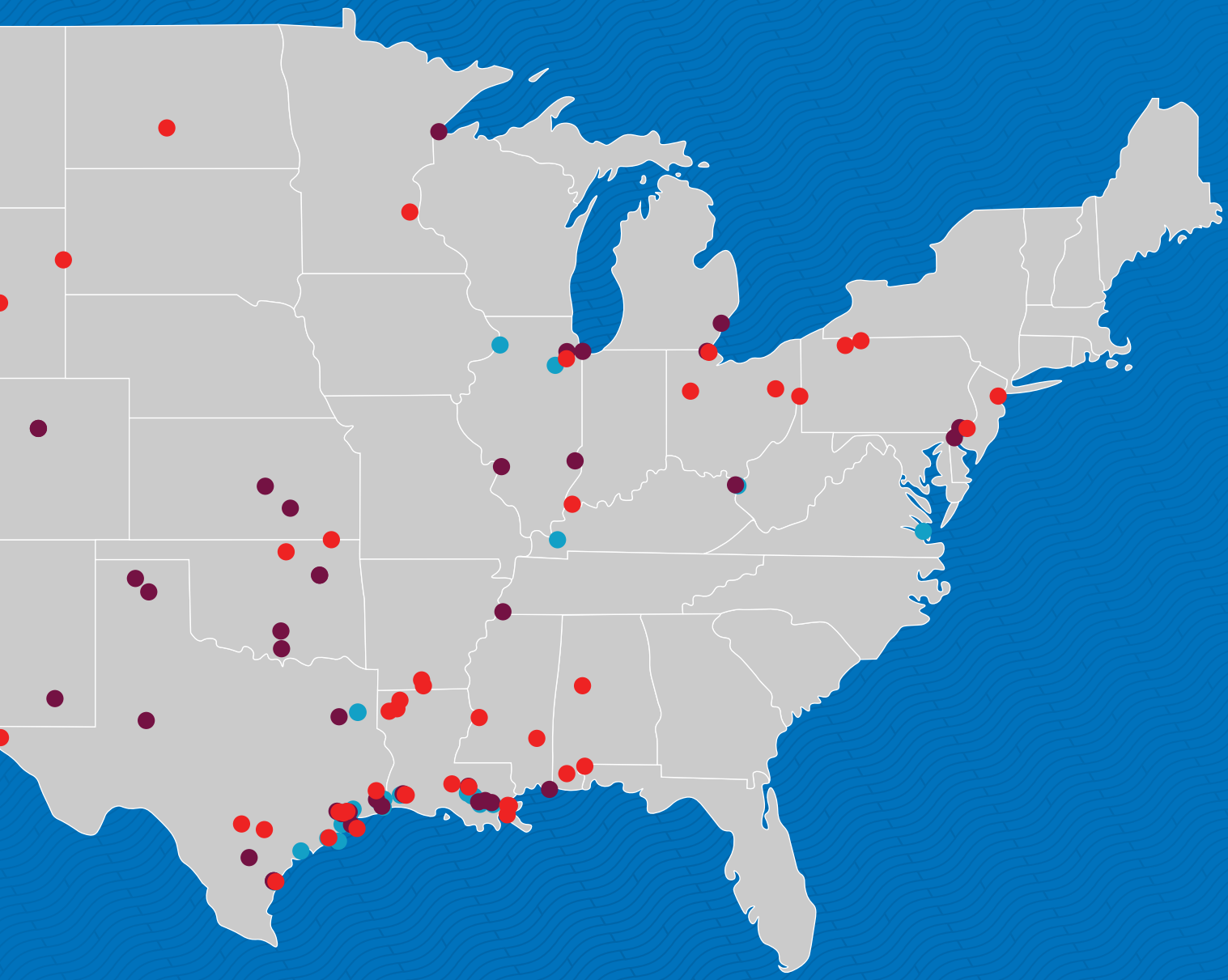
- **57** refineries produce gasoline and other fuels, and produce base petrochemicals at **212** petrochemical units colocated with the refineries



- **154** standalone petrochemical units produce base petrochemicals



There are 131 operable refineries and 366 petrochemical manufacturing units in the United States.



The American Fuel & Petrochemical Manufacturers (AFPM) is the leading trade association representing the makers of the fuels that keep us moving, the petrochemicals that are the essential

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5 Refining

The U.S. refining industry is the most complex and efficient in the world, making the gasoline, diesel and refined products that continue to be essential for fueling our nation and the world.

17 Petrochemical

Petrochemicals are the building blocks of virtually every part of the global economy. They are foundational to healthcare, technology, energy, agriculture and beyond, and are difference-makers in products we use throughout our days.

25 Midstream

The midstream sector includes the companies that transport feedstocks into refining and petrochemical facilities and end products out to the market.

33 Environmental Stewardship

The U.S. refining, petrochemical and midstream sectors are actively working to reduce emissions, conserve water and energy, reduce waste and preserve the lands and ecosystems that surround them.

43 Health and Safety

AFPM members' commitment to safety goes beyond upholding codes and standards that guide operations, it is embedded in their cultures and instilled in every employee from day one.

building blocks for modern life and the midstream companies that transport our feedstocks and products where they need to go. We make products that make life better, safer and more sustainable.

57 Security and Emergency Response

The refining and petrochemical industries plan and prepare 365 days a year for a variety of events, from extreme weather to cybersecurity to physical threats to our facilities, to be prepared to protect our employees and facilities.

63 Workforce and Community Development

Our industries emphasize career growth, diversity and inclusion, while also investing in future workers and supporting community programs.

71 Policies and Principles

AFPM works to advance public policies that address our most pressing challenges.

77 Board, Members and Resources

Listings of AFPM Board of Directors, Executive Committee, AFPM Members, Committees, Subcommittees and Working Groups.

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

Last year marked a pivotal moment for the U.S. refining, petrochemical manufacturing and midstream industries. We navigated a challenging business environment alongside historic elections that brought our industries and our products to the forefront of public dialogue. AFPM executed an advocacy campaign to highlight the essential need for affordable and reliable liquid fuels, and the importance to protect consumer choice while reducing emissions. Throughout the year, our industries demonstrated remarkable resilience, adaptability, and commitment to consumers and our workforce.

Our refineries, with their sophistication and complexity, remain the backbone of our economy and national security. They support millions of jobs, contribute significantly to the GDP, and generate substantial tax revenues. The production and export of refined products highlight our vital role in the global market, which continues to demand our products and will for the foreseeable future.

Our petrochemical manufacturers continue to be leaders in producing essential base chemicals, like ethylene and propylene, that go into countless products that make our lives better, healthier and safer. And yet, we recognize the need to address the mismanagement of plastic waste. That is why AFPM actively supports policies that promote circularity and recycling and the United Nations' efforts to reach an agreement to end plastic pollution. Although the United Nations discussions did not conclude last year, we remain committed to advocating for an agreement that acknowledges the essential role of plastics in society while effectively addressing plastic waste management.

Our midstream infrastructure, encompassing pipelines, railroads, ports and trucks, is crucial for the efficient transportation of energy supplies and petrochemical products. Ensuring regulatory certainty, including streamlined permitting and continued investment in this infrastructure are essential for strengthening our supply chains.

AFPM is committed to environmental stewardship. We continue our work to reduce emissions, conserve resources, and enhance biodiversity. Our members' investments in emissions reduction technologies, like carbon capture and lower carbon fuels, represent only a few examples of our commitment to operating more sustainably.

No issue is more important than the safety of our workforce and communities. We have made great strides over the last decade, and as a result, our industries are now some of the safest in the country. But we know our work is not done and that we must continue to raise the bar. This commitment extends to security, where we have made significant strides in protecting our facilities and personnel in an ever-changing threat landscape. Both our safety protocols and security measures are enhanced through ongoing collaboration across industry and with federal, state, and local government agencies, ensuring we remain vigilant and adaptable to emerging challenges.

Lastly, we remain steadfast in our dedication to our workforce and the communities in which we operate and serve. They are critical to our past and future success.

This report reflects our industry's resilience, innovation, and commitment to excellence. We are proud of our members' achievements and remain dedicated to supporting our industries' push to drive progress in the years to come.

Thank you for your continued support.

Sincerely,

Willie Chiang
AFPM Chairman of the Board

Chairman &
Chief Executive Officer
Plains All American Pipeline, L.P.

Chet M. Thompson
President and CEO

American
Fuel & Petrochemical
Manufacturers

Refining

Refining

Our U.S. refineries are among the most sophisticated and complex in the world and are strategic assets critical to our nation's economy and security. They support millions of jobs, provide billions of dollars in labor income and contribute significantly to the U.S. gross domestic product (GDP) and balance of trade. They supply the energy and fuels that consumers in the United States and around the world need to thrive.

According to the U.S. Energy Information Administration (EIA) and the International Energy Agency (IEA), petroleum will continue to fuel the world for years to come and as a result petroleum refiners will continue to support our economy.

Employment and Economic Contributions

The U.S. refining industry contributes significantly to the economy and supports millions of American jobs. In 2022, it supported nearly three million jobs in all 50 states and the District of Columbia. These are jobs that require advanced skills and knowledge but not necessarily advanced degrees. Opportunities include crane operators, mechanics, data scientists, cybersecurity experts, welders, drone operators, meteorologists, environmentalists, and many more.

The nearly three million jobs created by the industry include 64,500 direct, 1,551,000 indirect and 1,351,900 induced. This high number of indirect and induced jobs means the industry has the largest jobs multiplier of any U.S. industry.

Employment is characterized by three groups of workers:

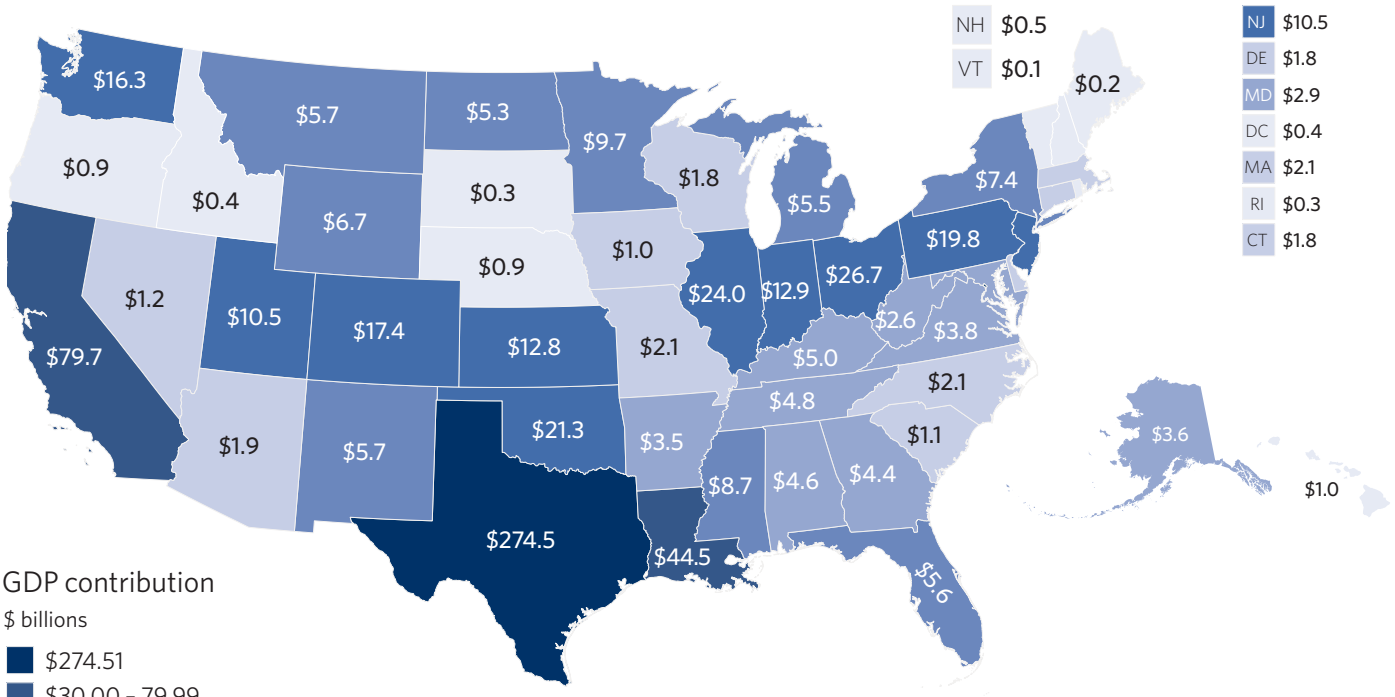
Direct employees are people who work on the ground at the facilities.

Indirect employees are those individuals who support refinery operations, including those at company headquarters, on- and off-site contractors and suppliers.

Induced workers are individuals who work at the businesses where our industries' direct and indirect workers spend their money, including restaurants, grocery stores and auto repair shops.

46x The refining industry's jobs multiplier is 46, meaning **for every one job at a refinery, an additional 45 jobs were supported elsewhere** in the economy.

GDP contribution of U.S. refineries by state, 2022[1]



GDP contribution
$ billions

- $274.51
- $30.00 – 79.99
- $10.00 – 29.99
- $5.00 – 9.99
- $2.50 – 4.99
- $1.00 – 2.49
- $0.10 – 0.99

$688 billion of GDP across the United States

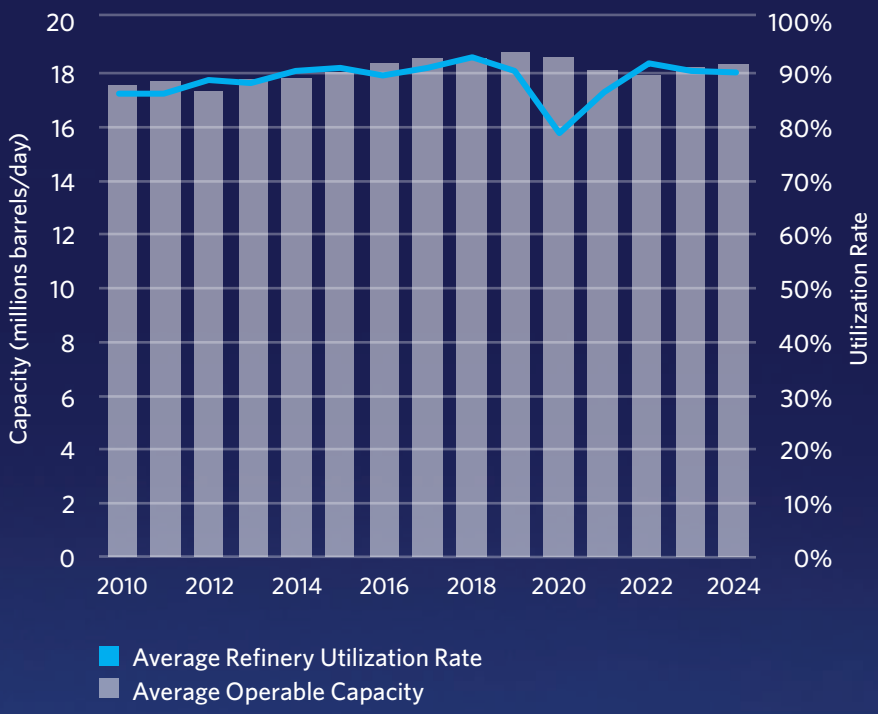
Fueling the World

U.S. refineries produced more than 270 billion gallons of refined product in 2024, more than any other country and more than enough to meet U.S. demand and supply the growing global market for refined products. In 2024 the United States exported more than 100 billion gallons of gasoline, diesel, jet fuel and other refined products to more than 150 countries, making a significant positive contribution to the U.S. balance of trade.

270 Billion Gallons

U.S. refineries produced more than 270 billion gallons of refined product in 2024

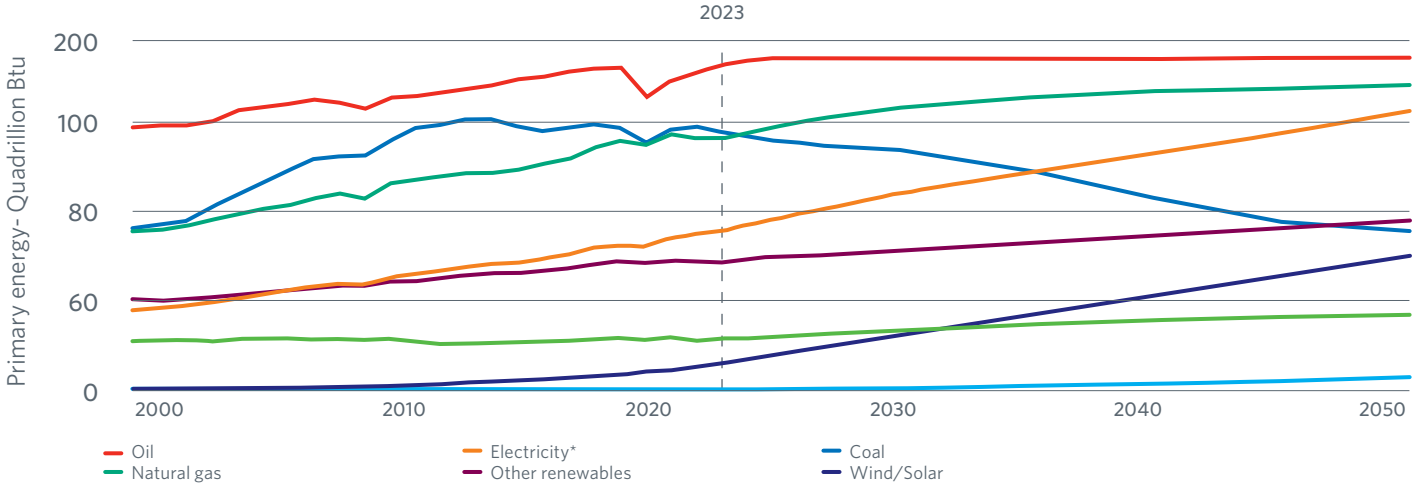
U.S. Refinery Utilization[2]



Refinery capacity utilization is the amount of crude oil a refinery or group of refineries *actually process* into gasoline, diesel, jet fuel and other products compared to the maximum amount of crude oil the refinery/refineries *could* process. U.S. refinery utilization rates continue to be among the highest in the world, at around 90% in 2024.

As demand for energy and petroleum products in the United States and around the world continues to increase, refined petroleum products are expected to supply a significant share of total energy demand. Energy outlooks project that petroleum derived fuels will continue to supply more than a quarter of all energy demand through 2050.

Global Energy Demand by Fuel[3]

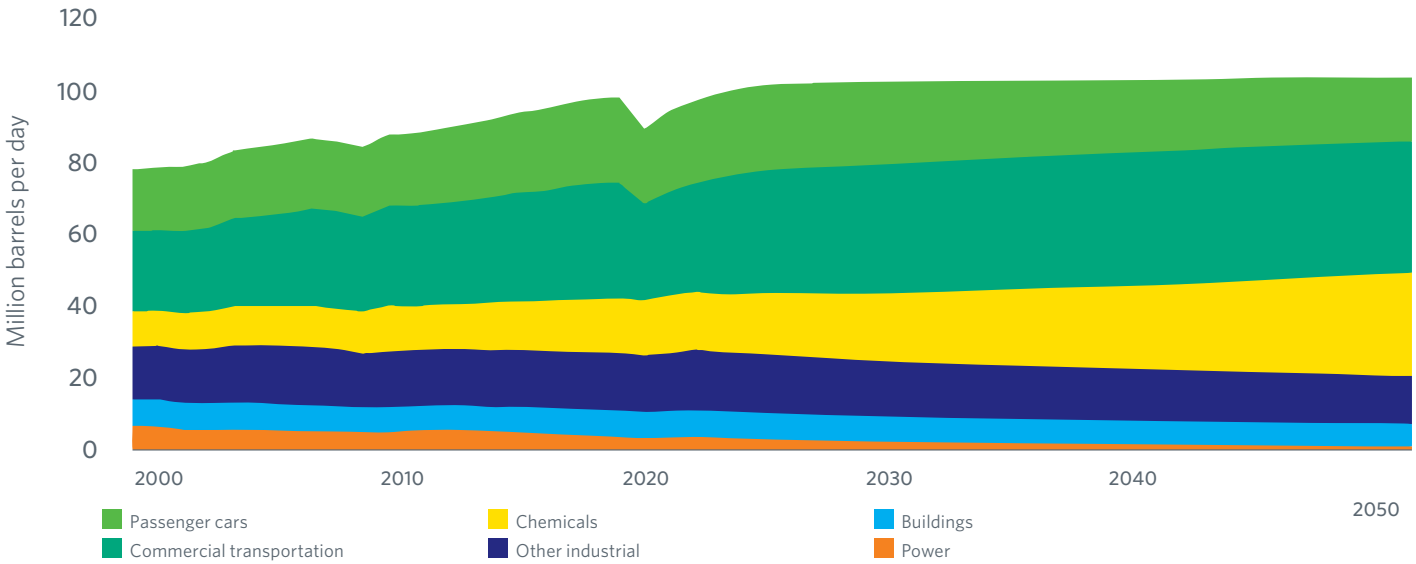


*Electricity and hydrogen are secondary energies derived from the primary energies shown.

According to ExxonMobil's global energy outlook, oil and natural gas will continue to be the primary energy sources through 2050.

Source: © 2024 Exxon Mobil Corporation

Oil Demand (excluding biofuels)[4]



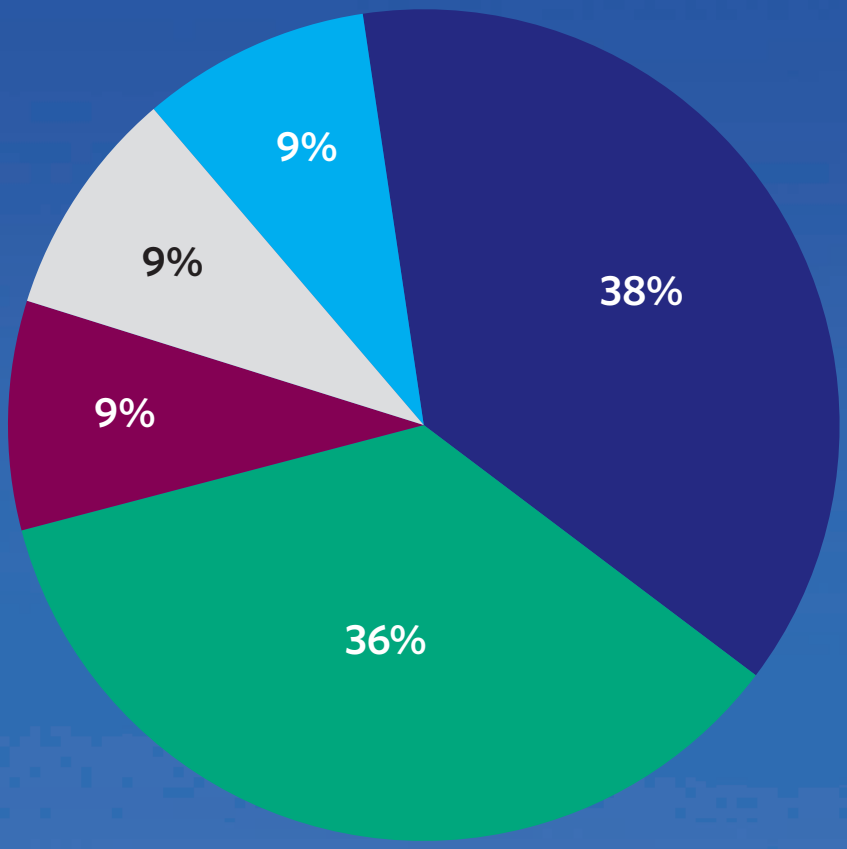
Oil will continue to supply a substantial share of transportation energy demand. Liquids fuels are energy-dense, which is critical for supplying energy for passenger cars and aviation, marine and heavy trucking. Oil will also supply an increasing share of demand in the production of chemicals.

Source: © 2024 Exxon Mobil Corporation

U.S. Primary Energy Consumption by Energy Source, 2023[5]

U.S. energy demand is growing, with petroleum continuing to play a major role. In 2023, petroleum products like gasoline, diesel, home heating oil and jet fuel supplied 38% of the nation's energy needs, more than any other single source.

- Petroleum
- Natural gas
- Renewables
- Coal
- Nuclear



Source: U.S. EIA

The Future of Gas- and Diesel-Powered Cars

Less than 10% of new vehicles sold in the United States are battery electric vehicles. The rest are internal combustion engine vehicles, powered fully or partially by gasoline and diesel fuel. Despite this overwhelming consumer preference, in the last four years, the previous administration and several states sought to phase out and even ban sales of new internal combustion engine vehicles to spur the market for electric vehicles.

From 2020 to 2024, these "gas car ban" and "EV mandate" policies included:

EPA Tailpipe Emissions Standards
Last spring, EPA finalized tailpipe standards for model year 2027-2032 passenger vehicles that required the U.S. vehicle fleet to meet an average estimated tailpipe emission target of 85 grams/mile by 2032 — the most stringent target EPA has ever issued.

Corporate Average Fuel Economy (CAFE) Standards
In June, the Department of Transportation sought to fast-track electrification of the U.S. vehicle fleet by establishing 50.4 miles per gallon as the average fuel economy new cars and trucks must achieve by model year 2031.

California Gas- and Diesel-Powered Car Ban
Announced in 2020 and finalized in 2022, California's Advanced Clean Cars (ACC) II regulation would fully ban sales of new gasoline, diesel and traditional hybrid cars and trucks by 2035. Americans strongly oppose gas car bans and EV mandates, but too few of them knew such policies were already underway in our country.

AFPM spent 2024 raising awareness about these policies and ensuring elected officials knew exactly where their constituents stand. With AFPM drawing national attention to the issue, President Trump made "ending the EV mandate" a day one priority for his administration. Even former Vice President Harris had to confront the issue telling a crowd in Michigan she would never tell Americans what kinds of cars they must drive.

Until each of these policies — from EPA's tailpipe rule to California's gas car ban — are scaled back, fully unwound or defeated in court, AFPM will continue to push back and fight for Americans' vehicle choice and the competitiveness of U.S. liquid fuels.

Travel on U.S. roads in 2023 reached an all time high of **3.26 trillion miles**.[6]

Petroleum derived fuels supply the vast majority — **almost 90%** — of total U.S. transportation energy demand.[7]

Why do we use the words 'ban' and 'mandate?'

Some have criticized AFPM's characterization of policies as "bans" on most new gas-powered cars or "EV mandates." Here's why we use those exact words:

In the case of the 2024 EPA tailpipe rule, the standard — an 85 gram/mile fleetwide average by 2032 — is so low that no gas, diesel or traditional hybrid in existence comes close to meeting it. The best traditional internal combustion engine vehicle comes in around 225 g/mile. Barely five plug-in hybrids would make the cut. EVs would get a perfect score of zero. Auto makers would have to sell significantly more EVs to sell any gas cars and still achieve the fleetwide average, resulting in some Americans who want a gas car not being able to find one, and those who do, would pay higher prices. EPA's own compliance pathways for this regulation suggest gas cars would likely end up capped to no more than 29% of new vehicle sales in just eight years.

In the case of California's ACC II regulation, the policy is an outright ban on sales of new gas and traditional hybrid vehicles by 2035. Under these rules, every Californian and every American living in the dozen-or-so states that adopt California's rule (roughly 35% of the U.S. population) will lose the ability to buy the new car or truck of their choosing in their home states.

Altogether, the tailpipe rule, the California ban, CAFE standards and government fleet mandates are meant to end gas cars and force the country toward an all-electric future.

Which cars meet the EPA standards on their own?

Based on review of fueleconomy.gov values for MY23.

	Gasoline-powered ICEVs	Hybrid	Plug-in Hybrids	Battery Electric
Do meet	—	—	**5** models	All **144** models
Do not meet	**919**/919 models	**179**/179 models	**39** models	—

North American Energy Security

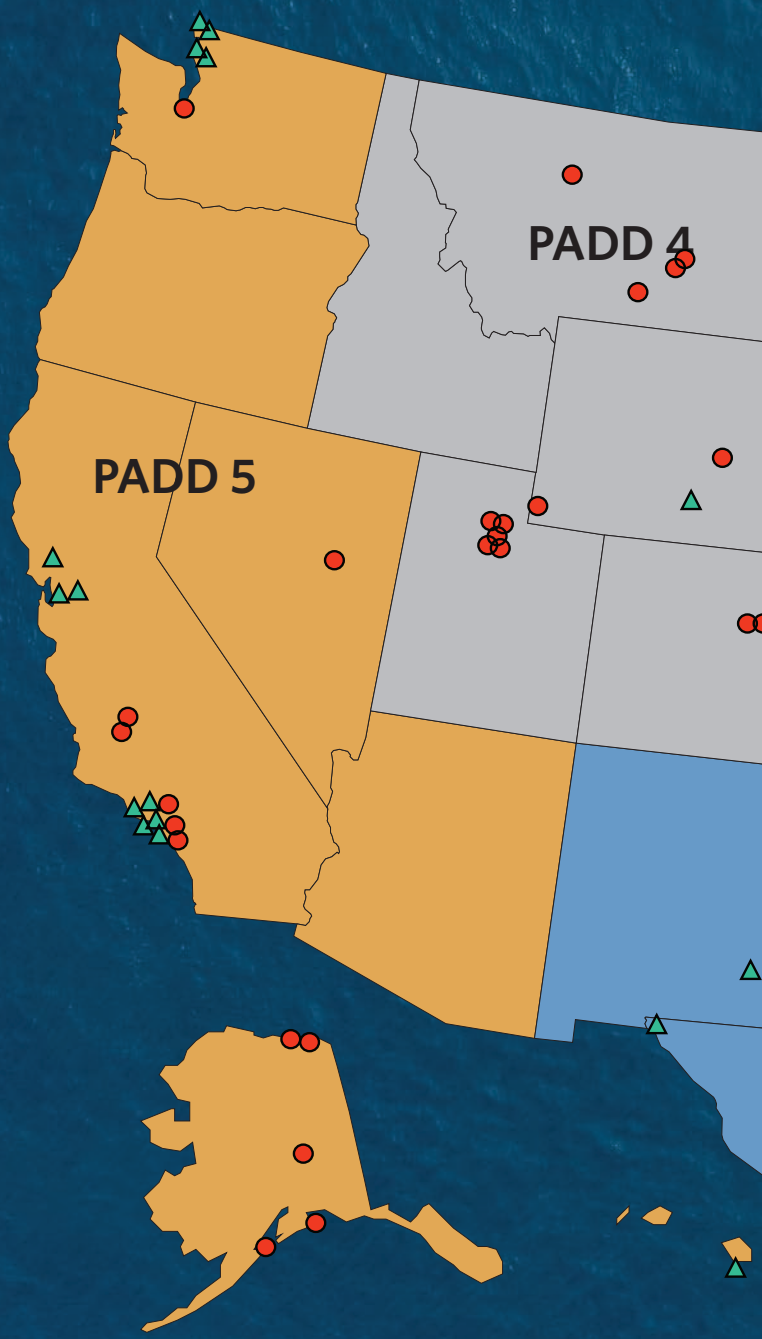
The United States is the world's number one producer of crude oil and refined products. In fact, our refineries produce more fuel and refined products than the United States consumes.

About 60% of the crude that runs through U.S. refineries comes from the United States and about 88% of crude inputs are from North America. Of the crude we import, most comes from Canada and Mexico, about 60% and 7%, respectively. In the Midwest, Canadian crude accounts for an even larger share of total refinery throughput, about 65%, which means Canadian crude is the primary feedstock for Midwest refiners. Much of the crude oil we import is heavier, higher sulfur crude oil that many U.S. refineries are specially configured to process.

Heavier, higher sulfur crude oil is harder to refine and requires facilities to have more sophisticated process units. The U.S. refining industry has the biggest complex refining kit in the world — meaning we have more facilities and units than anywhere else capable of turning the hardest-to-refine types of oil into consumer products like gasoline, diesel and jet fuel. The heavier crude we import is needed for these complex refineries. Feeding a complex refinery light, sweet crude that it wasn't designed to process makes the refinery less efficient, leading to lower gasoline, diesel and jet fuel production, and potentially threatening long-term refinery viability.

While the United States exported more than 100 billion gallons of refined products in 2024 there are regions of the country, including California and the Northeast, that cannot rely solely on U.S. produced refined products. These regions lack sufficient local refining capacity and do not have economic access to other U.S. refining centers because of distribution infrastructure limitations. Imports are an important and economical way to help supply Americans in these parts of the country with fuel.

Of the percentage of crude oil and refined products imported into the United States, Canada is our largest supplier, trading more than 8.5 billion gallons with the United States over the last year. Mexico is the second largest supplier of crude oil to the United States and is the single greatest export destination for U.S. refined products, purchasing more than 17.5 billion gallons of American-made fuels and products in 2024.

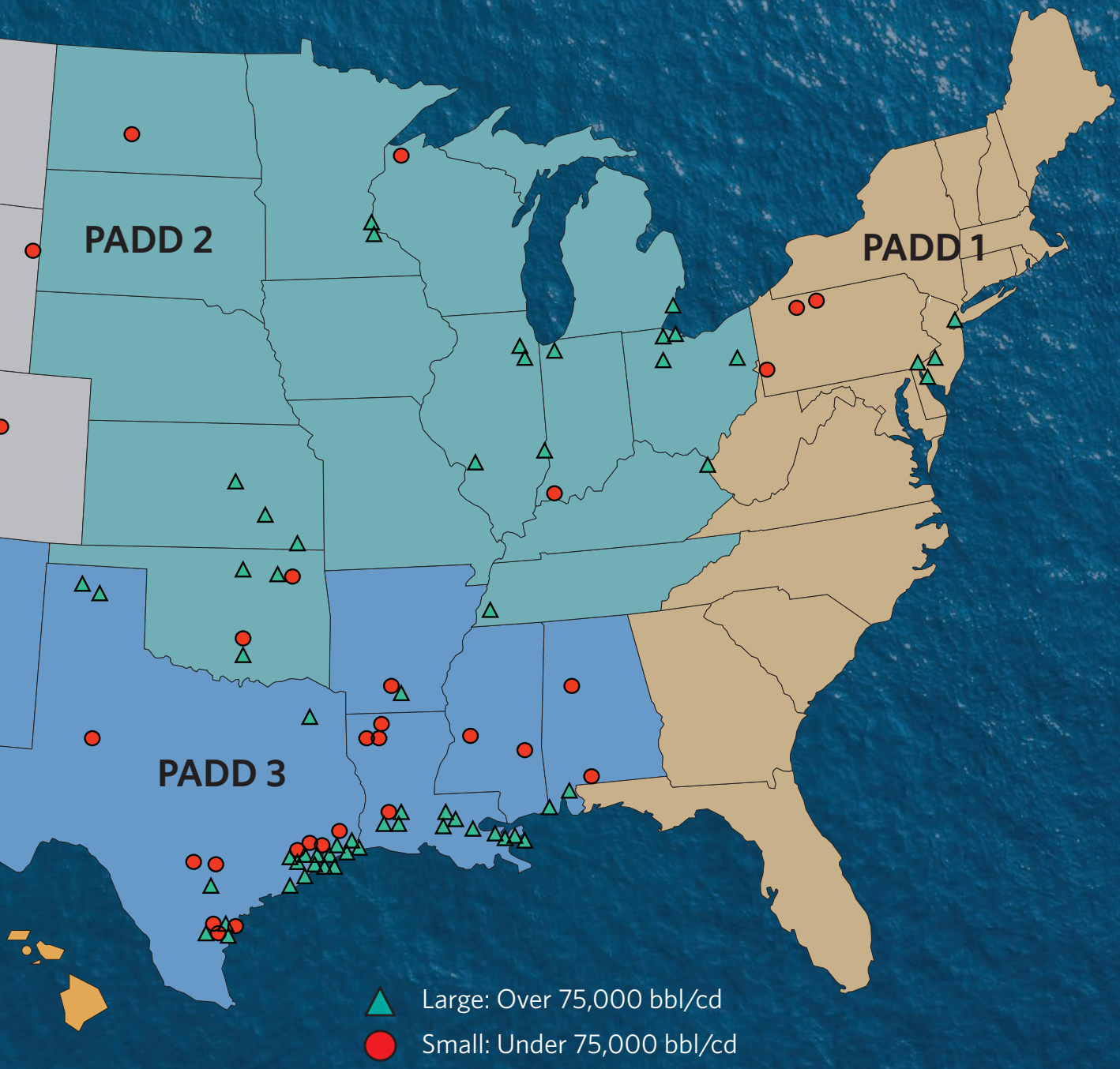


U.S. PADDs and Refinery Locations

Fuels distribution in the United States is defined by five Petroleum Administration for Defense Districts, known as PADDs.

Demand Center: PADD 1, which includes 17 East Coast states from Maine to Florida, has the largest demand for petroleum fuels like gasoline, diesel and jet fuel.

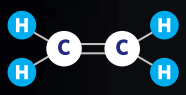
Capacity Center: PADD 3, covering six states including Louisiana and Texas, has the country's largest share of refining capacity. More than 50% of atmospheric crude distillation capacity is located in PADD 3.



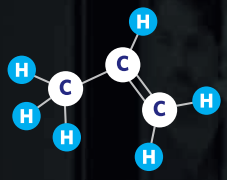
Petrochemical

Petrochemical

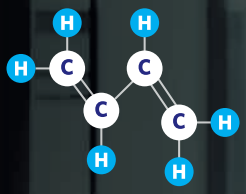
The six base petrochemicals — ethylene, propylene, butylenes, benzene, toluene and xylenes — are the building blocks to millions of products that make life better, safer and healthier. These base petrochemicals are used to make products that keep our homes warm in the winter and cool in the summer; keep our healthcare workers safe and our medical facilities clean; reduce emissions by lightweighting cars and emergency services, and help keep us healthy.



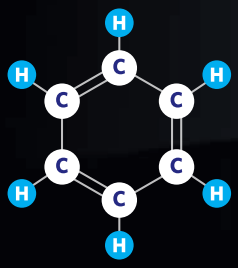
ethylene



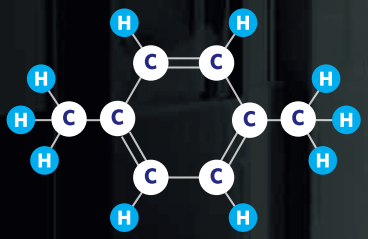
propylene



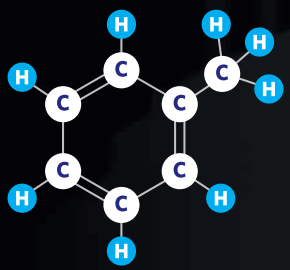
butadiene
(butylene example)



benzene



toluene



xylene

In-demand Petrochemicals

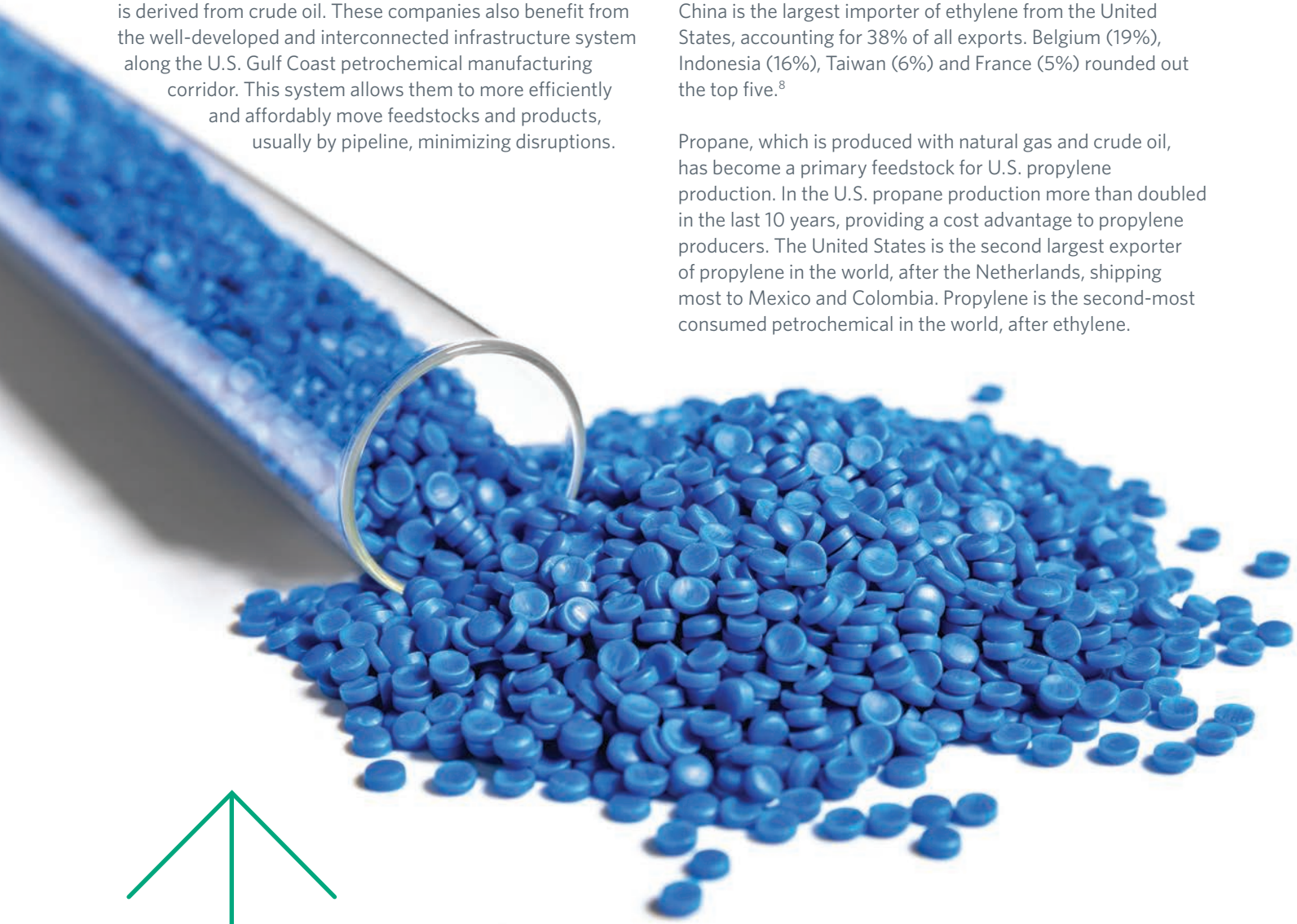
Our petrochemical manufacturers continue to be global leaders in the production of ethylene and propylene, the two most in-demand petrochemicals in the world that are essential to countless products we rely on every day.

Ethane, which is produced with natural gas and crude oil, is the primary feedstock for U.S. ethylene production. It provides our petrochemical companies with a significant cost advantage over our competitors that use naphtha as a feedstock, which is derived from crude oil. These companies also benefit from the well-developed and interconnected infrastructure system along the U.S. Gulf Coast petrochemical manufacturing corridor. This system allows them to more efficiently and affordably move feedstocks and products, usually by pipeline, minimizing disruptions.

In 2023, U.S. exports of ethane and ethane-based petrochemicals (i.e., ethylene and its derivatives) reached an all-time high of 21.6 million metric tons. This represents an increase of 135% in the last decade and a 17% increase since 2022. Our cost advantage is expected to continue and improve by the end of the decade and qualifies ethane and ethane-based petrochemicals as important contributors to our nation's positive trade balance.

China is the largest importer of ethylene from the United States, accounting for 38% of all exports. Belgium (19%), Indonesia (16%), Taiwan (6%) and France (5%) rounded out the top five.[8]

Propane, which is produced with natural gas and crude oil, has become a primary feedstock for U.S. propylene production. In the U.S. propane production more than doubled in the last 10 years, providing a cost advantage to propylene producers. The United States is the second largest exporter of propylene in the world, after the Netherlands, shipping most to Mexico and Colombia. Propylene is the second-most consumed petrochemical in the world, after ethylene.



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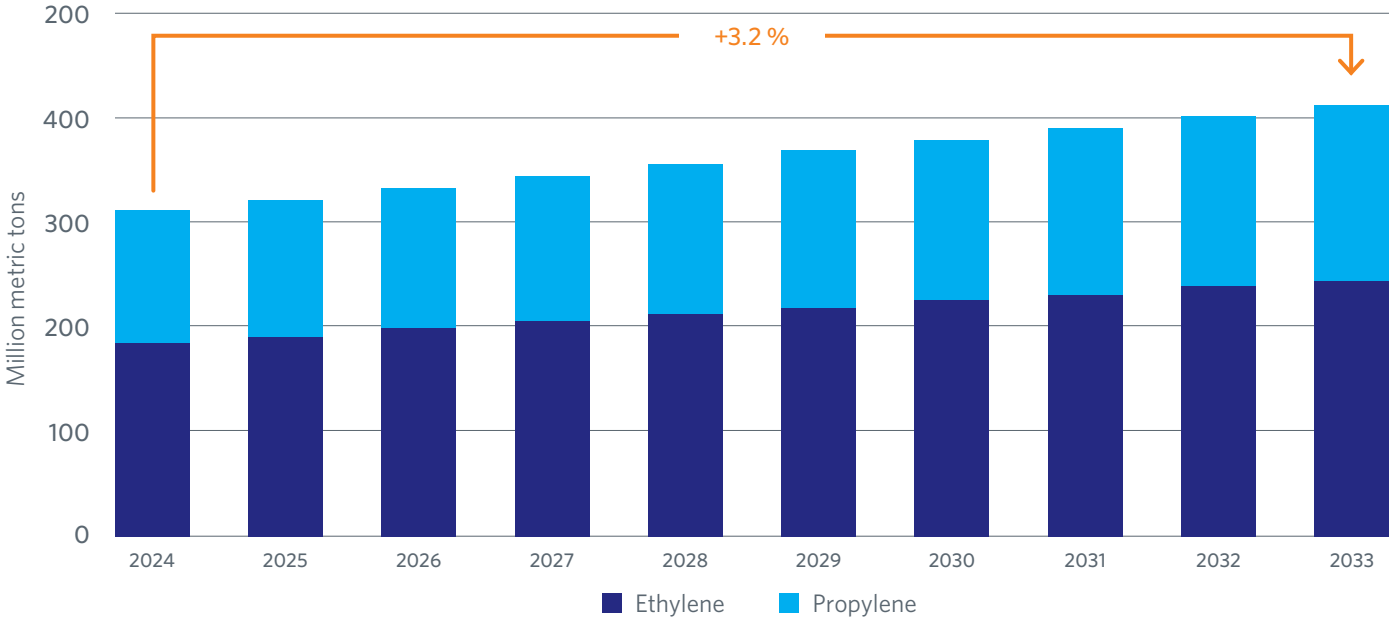
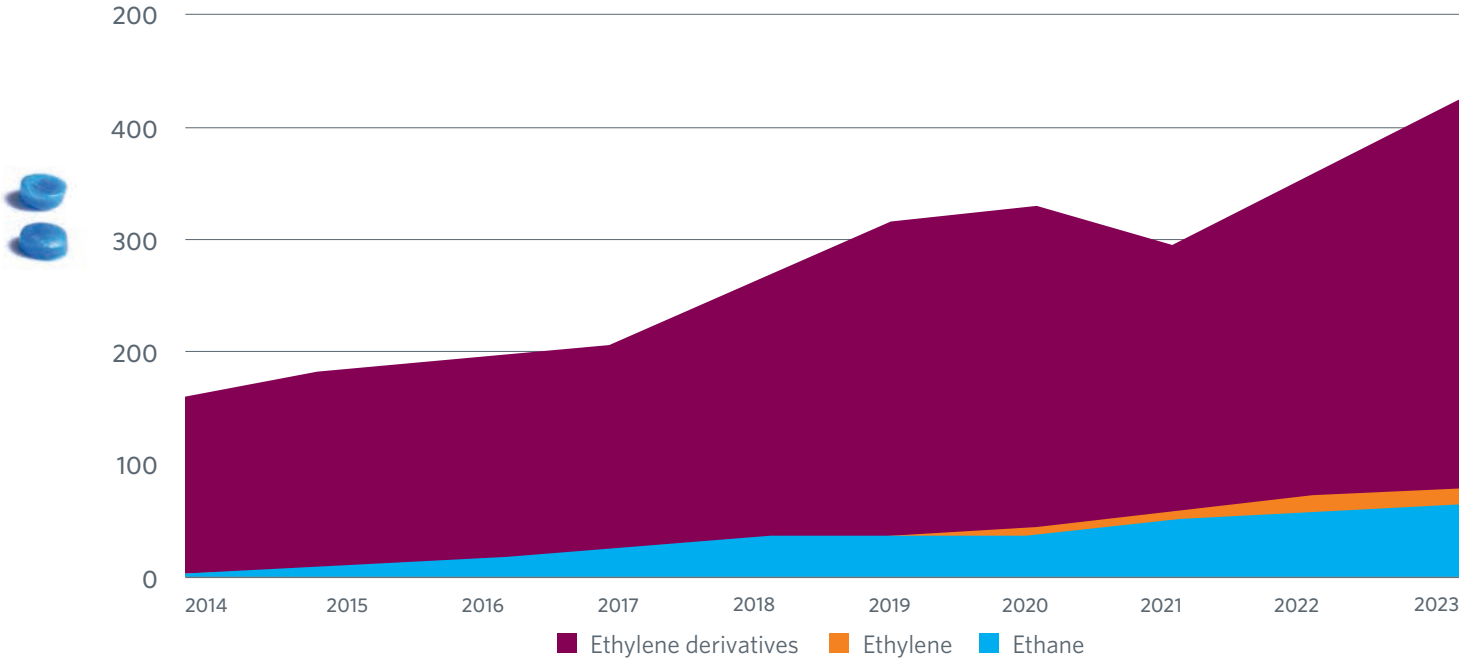
Global Ethylene and Propylene Demand[9]



At more than 3.2%, global ethylene and propylene annual demand growth will outpace global economic growth, which is expected to be around 2.6% in the coming years according to the World Bank. This is due to a larger portion of the growing global population moving into the middle class and demanding more of the products that make modern life possible.

Source: S&P Global

U.S. Annual Ethane and Derivatives Exports[10]



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Source: U.S. Energy Information Administration

Eliminating Plastic Waste in the Environment

Plastics derived from petrochemicals enable incredible things in our lives. They are light, durable, energy efficient and are responsible for fewer greenhouse (GHG) emissions throughout their lifecycle than many alternatives. They provide the global population with a high quality of life and enable economies to thrive sustainably, by being cost-effective, reducing food waste, and enabling alternate forms of energy and life-saving medications and medical supplies. It's essential, though, that plastic products be properly recovered, remanufactured, re-used or recycled.

The petrochemical industry believes ending plastic pollution requires multiple solutions. To meet the needs of consumers, achieve a more circular economy for plastics and eliminate plastic waste, we must improve waste management and collection systems, utilize all technologies (including mechanical and advanced recycling) and design products that are more easily reused and recycled. U.S. petrochemical manufacturers are invested heavily on all these fronts, in partnership with others in the plastics value chain, and we welcome policies that accelerate this progress.

Advanced Recyc

Plastic manufacturing starts with monomers, the fundamental building blocks of plastics, which are typically derived from oil and natural gas.

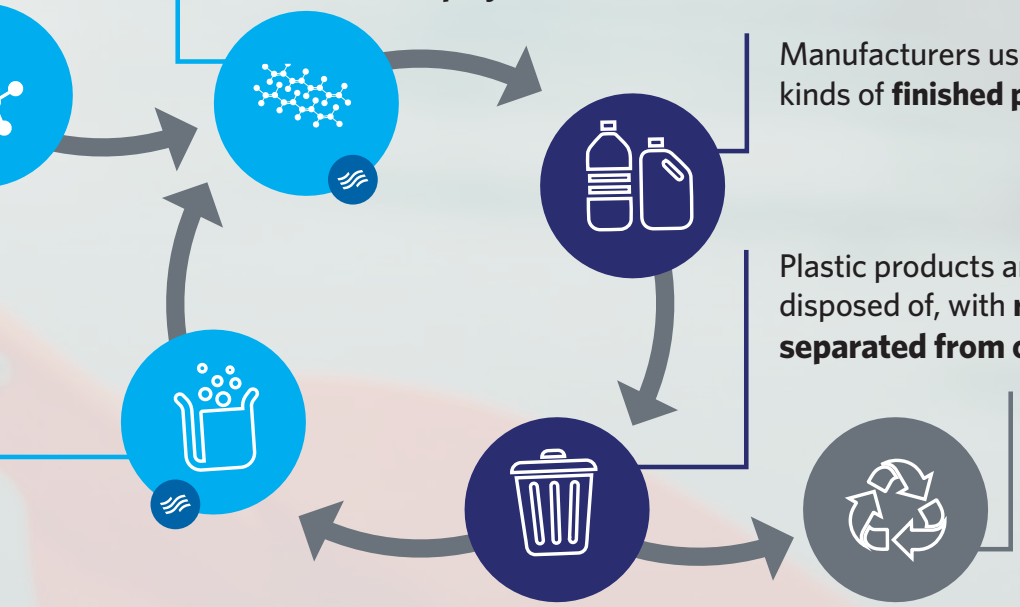
Advanced recycling can break a wide variety of plastics all the way down to monomers. **Plastic can go through this process over and over.**

Denotes processes AFPM members execute

Policies to Eliminate Plastic Waste and Increase Circularity

As part of AFPM members' commitment to addressing plastic waste, we are engaged in the United Nations' (UN) effort to develop a global agreement that helps end plastic pollution. Over the past two years AFPM, as an observer to the UN, has attended five sessions of treaty negotiations. At these meetings AFPM engaged with 170+ nations developing the global agreement and advocated for an agreement that recognizes the critical role plastics play in society, enables unlocking innovation, improves waste management and accelerates a global transition to a more circular economy for plastics. AFPM served as a resource for negotiators educating them on the petrochemical and plastics value chains and the impacts of potential policy solutions. We have also worked domestically with the U.S. government to implement policies to foster circularity and waste management consistent with global goals to reduce plastic pollution. AFPM is committed to continuing to advocate for such policies domestically and internationally as the UN negotiations continue.

cling



Monomers are turned into larger molecules called **polymers.**

Manufacturers use polymers to make all kinds of **finished plastic products.**

Plastic products are used, re-used and disposed of, with **recyclables often separated from other waste**.

Mechanical (traditional) recycling systems sort, shred and melt certain plastics back down to polymers. **Plastic can go through this process a limited number of times.**

The Potential of Advanced Recycling

Our companies have long been utilizing mechanical recycling, which melts and remolds discarded plastics to form new products and are investing billions of dollars in advanced recycling, a process that breaks down plastic waste at the molecular level. These molecules then become the raw materials to make new plastics and other valuable products. This technology expands the types of plastics that can be recycled and creates a higher-quality feedstock, thus reducing the amount of plastic waste in the environment and creating a more circular economy.

Reducing Chemical Risks

The production, importation, processing, distribution, use and disposal of commercial and industrial chemicals is highly regulated in the United States by the Environmental Protection Agency (EPA). The EPA is responsible for gathering health, safety and exposure data and can require testing to ensure that chemicals for sale or use do not harm human health or the environment. The primary federal law used to manage unreasonable risks from chemicals of all kinds is the Toxic Substances Control Act (TSCA).

TSCA

What you should know about TSCA.

TSCA fundamentals. TSCA, first enacted in 1976, authorizes EPA to regulate chemicals that present an "unreasonable risk" as determined by EPA. The statute covers the entire lifecycle of each chemical and not only directly affects a company's ability to make, sell and use chemicals; it has implications for American manufacturing, entire supply chains and interstate commerce. In general, TSCA requires EPA to evaluate the risks of a chemical before it is commercially manufactured and to evaluate the risk of chemicals that are already in commercial use. For chemicals that EPA finds present an "unreasonable risk" it must develop regulations to manage that risk.

Changes in risk assessment. Changes to TSCA in 2016 empowered EPA to reinterpret how the Agency evaluates risk and led the Agency to move away from a risk-based approach toward a hazard-based approach. A risk-based approach considers both the hazard of a chemical and the potential exposure to it, while a hazard-based approach focuses primarily on the inherent properties of a chemical, regardless of exposure levels.

In the last few years, EPA took this approach a step further, looking at every possible exposure of a chemical (a policy known as "whole chemical") versus looking at specific use cases. This means that they are regulating around every scenario where there could be exposure to a chemical with no regard to the likelihood or severity of exposure or the presence of regulatory or other exposure mitigation practices. This approach results in largely removing certain chemicals from the economy instead of focusing on safe use of these chemicals.

Other regulatory changes. There are also concerns that EPA may be trying to use TSCA to restrict plastic production and advanced recycling. For example, EPA is prioritizing the review of petrochemical building blocks that are used in the production of plastics despite these chemicals having very little likelihood of exposure in the manufacturing or plastic production processes.

EPA has proposed new regulations under TSCA that would apply to products of advanced recycling. These products are chemically identical to those already listed on the TSCA Inventory, which do not require regulation under TSCA.

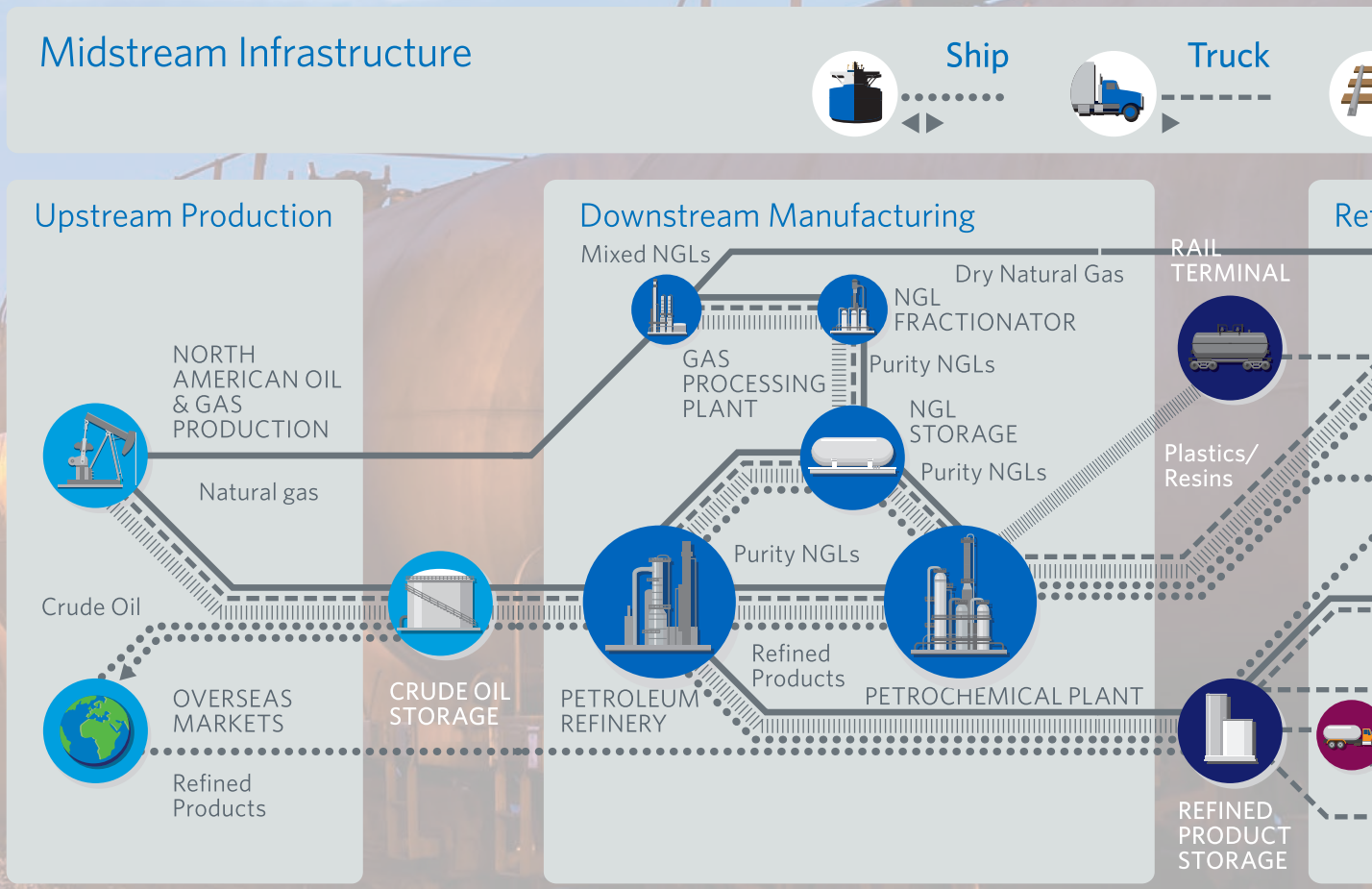
Impact of these changes. Altogether, these changes may lead to the elimination of chemicals and plastics that are essential to many lifesaving and life-enhancing goods, including personal protective gear and medical, emergency response and military equipment, among others. And they could threaten the expansion of advanced recycling, which is a critical component of advancing a more circular economy for plastics.

Midstream

Midstream

Refiners and petrochemical manufacturers rely on an extensive supply chain to move feedstocks and finished products in and out of their facilities. This supply chain — made up of a complex system of pipelines, ports, highways, railroads and storage facilities — is referred to as the midstream infrastructure that keeps America moving and our economy growing.

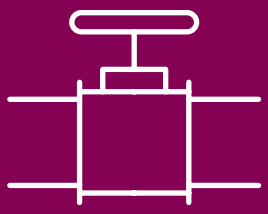
AFPM members invest billions in the midstream sector to build, expand, and modernize the energy infrastructure needed to safely and efficiently move and store America's energy resources. Regulatory certainty, streamlined permitting processes and continued investment are vital to strengthen the supply chains that ensure U.S. consumers have access to ample and affordable supplies of transportation fuels and other necessary products.



Midstream Infrastructure

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.

Midstream Facts:

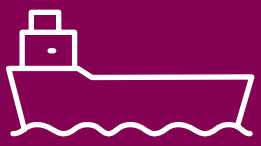


Pipeline

3.3 million miles of crude oil, natural gas liquids (NGL) and refined product pipelines move raw materials from production areas to refineries and petrochemical plants, and finished products to consumers.[11]

Rail

140,000 miles of railway track and more than 200,000 rail tanks cars move crude oil and NGLs from areas not served by pipelines or areas with inadequate pipeline capacity.[12]

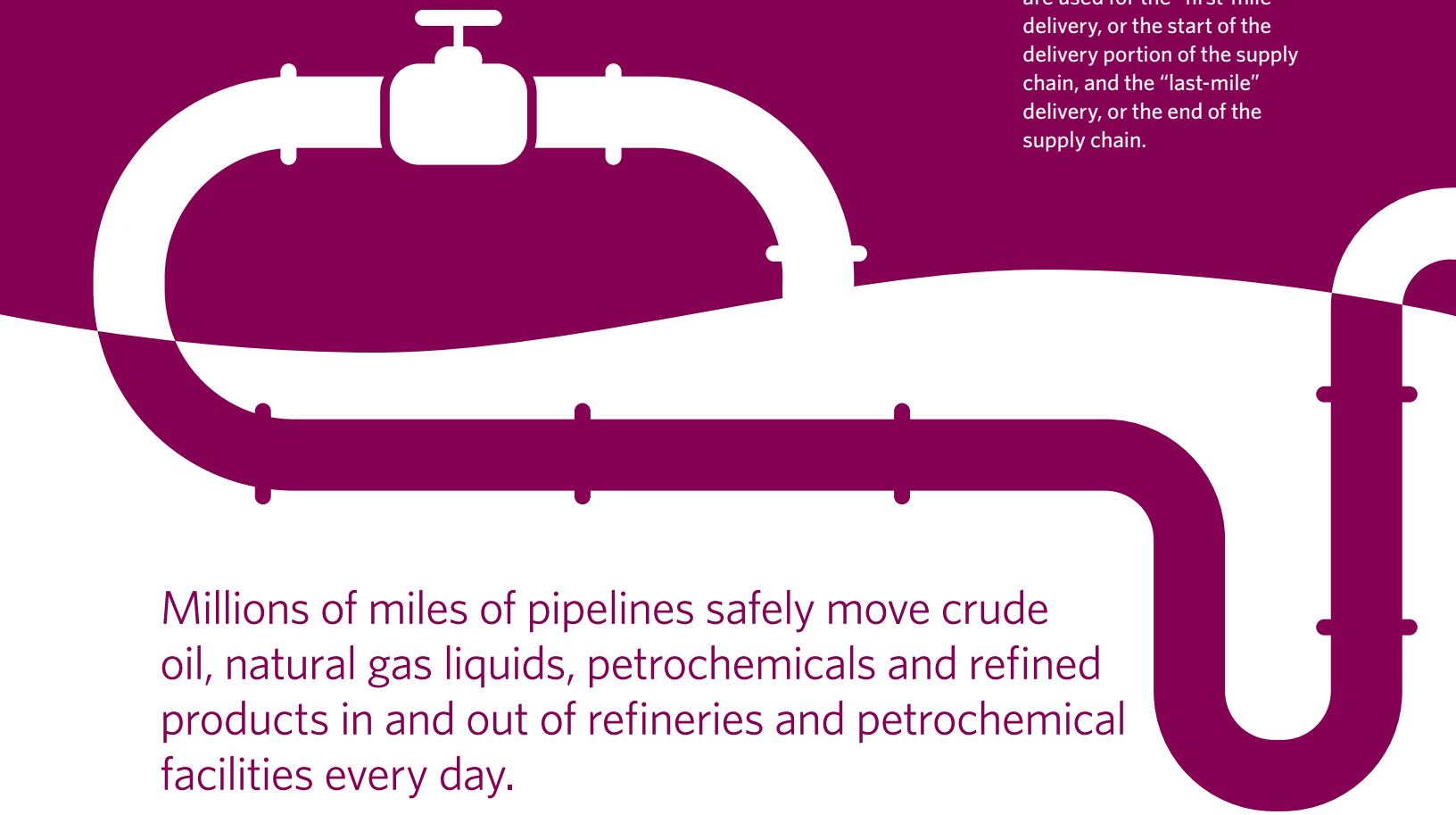


Ship

36,000 miles of inland waterways and more than 300 ports facilitate domestic fuel movements and provide access to global import and export markets.[13] [14]

Truck

Over 164,000 miles of highways help to move truck shipments of fuels to retail outlets, businesses and homes.[15] Trucks are the least common mode of transportation for fuels and are used for the "first-mile" delivery, or the start of the delivery portion of the supply chain, and the "last-mile" delivery, or the end of the supply chain.



Millions of miles of pipelines safely move crude oil, natural gas liquids, petrochemicals and refined products in and out of refineries and petrochemical facilities every day.

Pipelines Safely Move Products

Millions of miles of pipelines safely move crude oil, natural gas liquids, petrochemicals and refined products in and out of refineries and petrochemical facilities every day. They transport fuels like gasoline, diesel and jet fuel to consumers, and raw materials, or feedstocks, to manufacturers who turn them into everyday products like medicine and countless household products.

A range of measures are taken to ensure safe and reliable operations, starting with the planning process, throughout construction, extending into their operational phase. In recent years safety efforts have become increasingly innovative. Some companies monitor pipelines and related assets via satellites equipped with hyperspectral and electromagnetic sensors, which allow quick detection and leak prevention. Others inspect their pipelines using guided wave testing with additional ultrasonic inspection techniques to pinpoint corrosion threats earlier than more traditional inspection methods. One company invested in and began using airplanes equipped with sensors to detect ground elevation, land slips and other threats to pipeline safety — while also serving as an early detection system for spills.

Pipelines are also highly regulated. State and federal regulatory processes guide the construction and safe use of oil and gas pipelines, ensuring the safety of their design, operation, maintenance and emergency response of oil and gas pipelines.

Pipelines are regulated by the following:

Pipeline and Hazardous Materials Safety Administration is responsible for regulating the safety of design, testing, operation, maintenance, construction and emergency response of U.S. oil and liquids pipelines.

Federal Energy Regulatory Commission is an independent agency that regulates the interstate transmission of oil, natural gas and electricity.

Various federal regulations also control the permitting of pipelines, including the Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service, Army Corps of Engineers and others.

States are involved in reviewing and permitting pipelines.

Ports' Vital Role to our Industries

Recent strike concerns have put the spotlight on the critical role U.S. ports play in our economy. These ports are essential for our nation's trade, ensuring the smooth flow of goods that enhance our GDP and balance of trade. Among the most vital are the Gulf and East Coast ports, with Houston, South Louisiana and Corpus Christi leading the charge in the petrochemical and petroleum sectors.

Port Houston is notable for handling 267 million tons of cargo in 2021 and leading the nation in exports of propane, butanes and ethane. Not far behind, South Louisiana manages 225 million tons, while Corpus Christi handles 164 million tons of cargo. Any disruption in these ports can ripple through supply chains and energy distribution, underscoring the need for uninterrupted operations to maintain economic stability and growth.[16]

Houston:
267 million tons of cargo

South Louisiana:
225 million tons of cargo

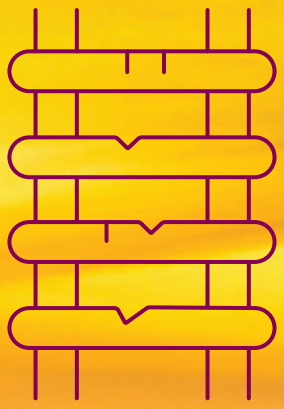
Corpus Christi:
164 million tons of cargo

Improving Rail Safety

Trains are often the best and sometimes the only way to ship certain types of critical materials long distances throughout the United States. The 140,000 miles of railway track laid across the United States move millions of tons of various materials and link the nation's ports and cities to facilitate domestic and international trade. In 2023, rail freight moved nearly 1.8 million metric tons[17] of materials around the nation's rail network, everything from chemicals and wood to vehicle parts and waste products, with energy products being the most common materials moved.

Rail transportation is undeniably vital and all stakeholders must do their part to maintain its safety, which relies on mitigation and prevention. U.S. rail shippers, many from the fuel and petrochemical industries, are enhancing its safety and have invested hundreds of millions of dollars into upgrading over 100,000 tank cars. Their sizable investments have led to an 85% reduction[18] in the conditional probability of release — a key measure of risk for hazardous materials transported by rail — for the U.S. flammable liquid fleet since 2013.

Our industries' investment in rail safety is only part of the solution. Broken tracks or welds are responsible for more than half of all rail incidents. In response, railroads have made significant investments in their infrastructure to reduce the number of derailments over the last decade. Together rail shippers and railroads have greatly reduced risk and their continued work will further enhance the safety of the system.



140,000 miles of railway track laid across the United States move millions of tons of various materials.

Environmental Stewardship

Environmental Stewardship

AFPM members are committed to operational excellence and minimizing the environmental footprint of their operations and products. Refiners, petrochemical manufacturers and the U.S. midstream industry are investing billions of dollars in the latest technologies and processes to improve air quality, further reduce the lifecycle carbon intensity of U.S. manufacturing and transportation, reduce waste, conserve water, advance renewable power, increase energy efficiency and preserve our environment. Our refiners are also producing increased amounts of renewable fuels to meet the world's energy needs while lowering the emissions of the products they manufacture.

Reducing Emissions

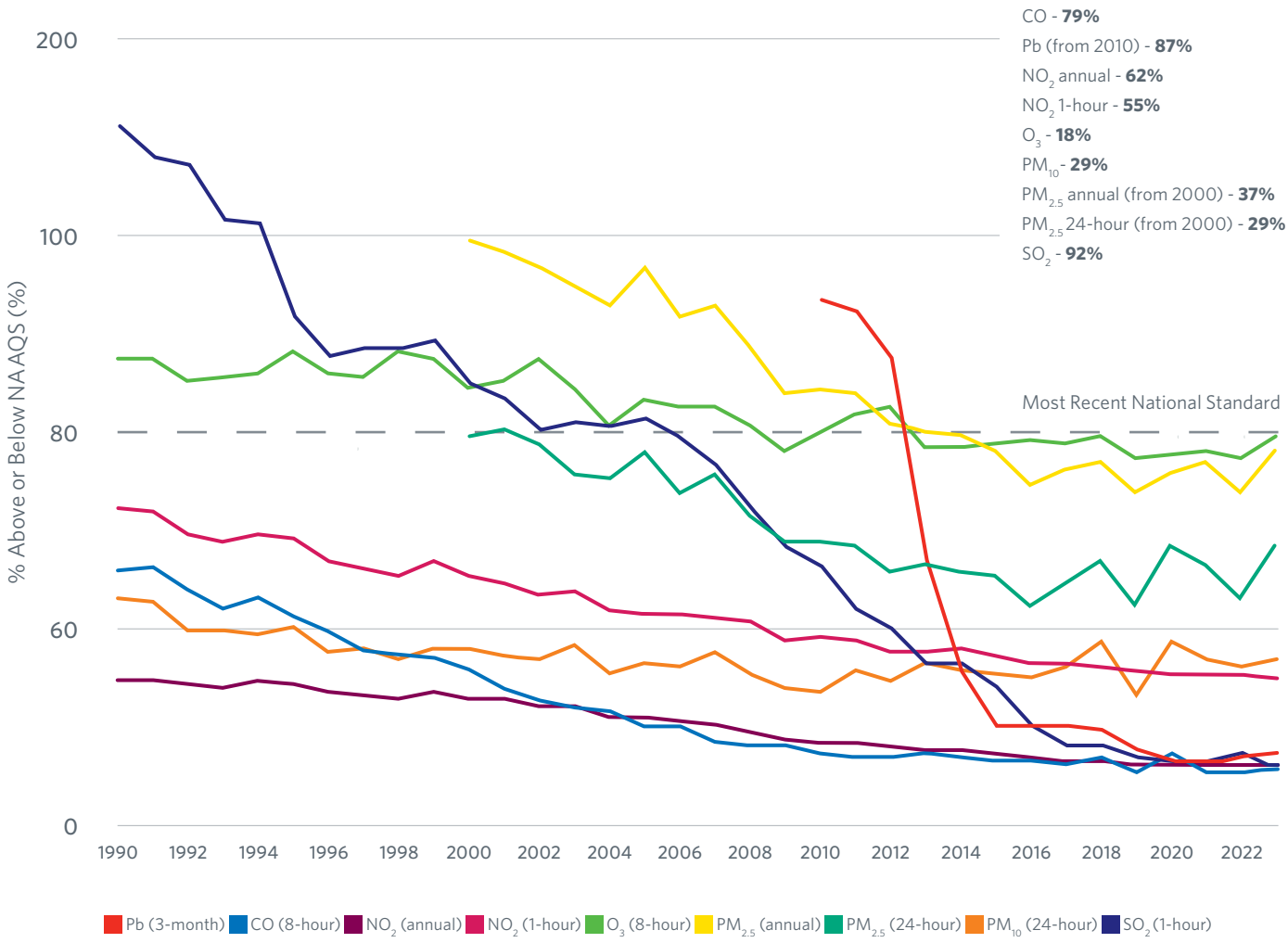
Between 1970 and 2022, the combined emissions of the six common pollutants dropped by 78%.[19] This progress occurred while the U.S. economy expanded and the population and energy use increased.

Petroleum refineries and petrochemical manufacturing have lowered their emissions of criteria pollutants while increasing production. In the last five years refineries have reduced particulate emissions per barrel by an additional 10%.[20]

The petrochemical and chemical manufacturing sectors also reduce the amount of chemical waste released to the environment by installing gas recovery units that recover and "recycle" gases, carefully monitoring to identify releases and implementing waste minimization plans. These activities result in billions of pounds of avoided air emissions each year.[21]

Air Quality Trends Show Clean Air Progress[22]

Declining National Air Pollutant Concentration Averages



Criteria air pollutants concentrations have dropped significantly since 1990.

10%
Emissions Reductions

In the last five years refineries have reduced particulate emissions per barrel by 10%.

How do refiners protect air quality?

"This is our home; this is our air and our water. We want to be good stewards of the area to ensure that the air here is just as good as everywhere else. We have hundreds of sensors across the refinery, both within the fence line and on the fence line. The amazing thing about our sensor network is that it can pick up tiny amounts of emissions that come from our hydrocarbons so we can catch a problem before it becomes a problem. We're here for the long run, so we're going to do it right."

— Shannon Olson
Environmental Director
Pine Bend Refinery

Member Achievements

Reducing Regulated, Non-Carbon Emissions

AFPM members are investing heavily to significantly reduce emissions from their facilities, while continuing to deliver critical products to the world.

- Since 2019, **Phillips 66** reduced its air emissions — which include sulfur, nitrogen oxides, particulate matter and volatile organic compounds (VOCs) — by 23% across its refining assets. From 2022 to 2023, it also reduced its air emissions by 7%.
- **ExxonMobil** completed a $230.5 million, three-year modernization initiative at its Baton Rouge, Louisiana, refinery that included new technology to reduce the refinery's emissions of VOCs by 10%.
- **Marathon Petroleum**'s Anacortes, Washington, refinery completed a project to incorporate selective noncatalytic reduction technology, where waste ammonia is rerouted for injection into the carbon monoxide boiler to react with oxygen and nitrogen oxide to produce nitrogen and water vapor. The project has led to a roughly 31% reduction in nitrogen oxide emissions at the site. Initiatives like this one have helped Marathon reduce criteria pollutants by 26% since 2016.[23]

Reducing Greenhouse Gas Emissions

AFPM refining, petrochemical and midstream members are reducing their greenhouse gas (GHG) emissions through a variety of strategies and significant investments. They range from simple equipment and control system upgrades to the development of new technologies and fuels.

- **Carbon Capture and Storage:** As a leader in the carbon capture space, **ExxonMobil** is investing in research to develop more efficient carbon capture, developing new designs for offshore and pipeline-based CO_2 transfer, and working with leading universities to improve modeling for geologic storage and long-term monitoring of CO_2.

- **Renewable Power:** **Flint Hills Resources** announced it will build its second company-owned solar installation at its Corpus Christi West refinery. The 27-MW solar installation will include approximately 56,700 panels in what is believed to be the first solar project in Texas to provide onsite, self-generated electricity directly to a refinery. The company also began full operation of its 45 MW solar system at its Pine Bend, Minnesota, refinery in early 2024, currently the largest of its kind providing direct input to an operating refinery.

- **Methane Reduction:** **Cheniere** employs zero-emission compressed air pneumatic controllers on valves and other equipment to eliminate methane emissions in its pipeline operations. The company also uses cutting-edge compressor engines that limit nitrogen oxide emissions to drive pipeline compressions.

- **Hydrogen:** **PBF** is working with **Enbridge**, **Air Liquide** and many other organizations to advance the Mid-Atlantic Clean Hydrogen Hub. The Department of Energy (DOE) chose the hub to undertake a process that could result in a $750 million award to help jumpstart the production of green and pink hydrogen in the area.

- **Renewable Diesel:** In 2024, **Phillips 66** completed the transition of its refinery in Rodeo, California, into one of the world's largest renewable fuels facilities. The Rodeo Renewable Energy Complex began producing roughly 30,000 barrels per day of renewable fuels in March 2024 and is expected to increase capacity to 50,000 barrels per day. The fuels produced will have up to 80% fewer lifecycle carbon emissions than conventional diesel.

- **Sustainable Aviation Fuel (SAF):** In October 2024, **Valero** reported that its large-scale SAF project at its renewable diesel plant in Texas was mechanically complete ahead of schedule and under budget and is in the process of starting up. The SAF project provides optionality to upgrade approximately 50% of the plant's annual 470 million-gallon renewable diesel production capacity to SPK or neat SAF.

- **Renewable Natural Gas:** **Chevron** and **Brightmark LLC** have formed a joint venture, Brightmark RNG Holdings LLC, to fund the construction of infrastructure and commercial operation of dairy biomethane projects in several states. Chevron purchases renewable natural gas (RNG) from these projects and markets the RNG volumes for use in vehicles operating on compressed natural gas (CNG). Chevron has acquired ownership of 56 CNG stations nationwide through its purchase of Beyond6, LLC to provide an outlet for this RNG.

Waste Reclamation and Recycling

AFPM members are minimizing waste by reducing and reusing materials and partnering with local recycling centers to increase the recovery and reuse of refining byproducts.

- 96% of all **Valero** refinery hazardous and exempted waste was recycled in 2023.
- **Placid Refining** continually evaluates by-products and residual materials to identify secondary markets with the goal of fostering recycling and reuse while maximizing resource utilization. This strategy has allowed Placid to greatly reduce waste generation from the Port Allen refinery.
- **W.R. Grace** actively works to minimize the generation of hazardous waste by partnering with recycling facilities and vendors to reclaim spent solvents and metals, reclaim and recycle mercury, and minimize the disposal of waste drums. W.R. Grace also recovers, reuses and resells byproducts such as high-concentration sodium aluminate and silica residues.

Water Management

Refiners and petrochemical facilities are discovering new ways to reduce freshwater use and recycle the water that is used to produce fuels and petrochemicals. By recycling wastewater we can repurpose it for various uses, reinforcing our commitment to responsible resource management.

- **Marathon Petroleum**'s Los Angeles refinery saved about 328 million gallons of fresh water by increasing the cooling water iron specification and saved an additional 99 million gallons by improving the level controls on the cooling tower basins.
- **Dow** piloted a new process that cleans hopper cars — a type of freight rail car — with high-pressure air rather than water, saving approximately 936,000 gallons of water during an eight-month period.
- **Ecolab**'s focus on improving water efficiency resulted in an overall water impact reduction of 18% per unit production, compared to a 2018 baseline. Ecolab also restored 34% of its absolute water withdrawal at high-risk sites, well on its way to meeting its 2030 goal of greater than 50% restoration of absolute water withdrawal volume at high-risk sites.
- In Washington state, **Par Pacific** reduces the amount of freshwater it uses by treating water used during one cooling process and then turning it into steam to use in a second process.

Conservation and Habitat Restoration

Fuel and petrochemical manufacturers are committed to conserving and preserving the land around their facilities and support local efforts to conserve and restore regional landscapes.

- **Phillips 66**, **Flint Hills Resources**, **Plains All American Pipeline** and **Energy Transfer** all support Ducks Unlimited's mission to preserve wildlife habitat. In 2023, **Phillips 66** provided Ducks Unlimited with a gift of $300,000 to help build ZooMontana's new Foster Waterfowl Refuge, the latest of more than 30 projects they have partnered on during the past decade that resulted in about $4 million donated to conservation efforts for more than 35,000 acres of wetlands. For over 30 years, **Flint Hills Resources** has worked with Ducks Unlimited to preserve wetlands and conserve habitat across America. **Plains All American Pipeline**, meanwhile, entered into a three-year agreement with Ducks Unlimited Canada to advance the conservation of the McIntyre Ranch in Alberta, helping to preserve one of the largest wetlands and prairie grasslands remaining in Canada and protecting the many animal species that thrive there.[24] And **Energy Transfer** has committed $5 million to Ducks Unlimited, helping to conserve over 8,500 acres of coastal wetlands and grasslands in Louisiana and Ohio.

- Over the last decade, the **CITGO** Caring For Our Coast program has resulted in over $8 million[25] in donations, more than 200,000 hours of volunteer time, nearly one million trees and grasses planted, more than 520,000 pounds of trash collected and 12,000 acres restored.

- **Eastman** provided grant funding and employee volunteers to bring to life a network of pollinator gardens, with over 5,000 square feet of gardens at four elementary schools in Kingsport, Tennessee. The project was recently recognized by Keep America Beautiful with an Innovation Award.

Energy Efficiency

Our industries are investing to achieve greater energy efficiency gains.

- **Energy Transfer** optimizes its operations to increase energy efficiency and reduce emissions through such measures as operating pipelines at consistent flow rates, adding a drag reducing agent to crude oil to reduce pipeline fluid friction and enforcing power limits on some stations to circumvent unnecessary spikes in the flow rate.

- **Chevron Phillips Chemical's** Marginal Abatement Cost Curve (MACC) process incorporates ideation and research to develop site-specific strategies to reduce emissions and maximize energy efficiencies. CPChem teams have put forth more than 800 MACC concepts and ideas; those projects flagged for further development hold the potential to abate up to 270,000 metric tons of CO_2 equivalent emissions (CO_2e).

- One year ago, **Arkema** announced a significant reduction in the carbon footprint of its bio-based Rilsan® polyamide 11 reaching less than 2 kg CO_2e/kg(1). The company recently announced a further reduction to 1.3 kg CO_2e/kg(1) by using more renewable electricity sources and by making several additional energy efficiency improvements in its production sites. The new value applies to global production of Rilsan® polyamide 11 beginning in January 2025.

Making Fuel with Solar Energy

"Environmental stewardship really is a priority for the industry. We are installing the largest solar generation behind the meter facility in the United States. This solar farm will be providing 45 megawatts of power to the refinery. That's about a third of our energy use. Refiners can definitely be part of a sustainable energy future, we just to have to continue really rising to the challenge and finding ways like this, to be part of a future we all can be proud of."

— Zak Portratz
Project Manager
Flint Hills Resources

Health and Safety

Health and Safety

Nothing is more important to our industries than safety. AFPM's refining and petrochemical companies have strong safety records and consistently work to improve performance to take care of our people, communities and environment. We believe that we are stronger if we work together, which is why we work closely with federal, state and local governments and agencies for the safety of everyone in and near our facilities. We are extremely proud that the refining and petrochemical industries are consistently ranked among the safest of all manufacturing industries in the country.

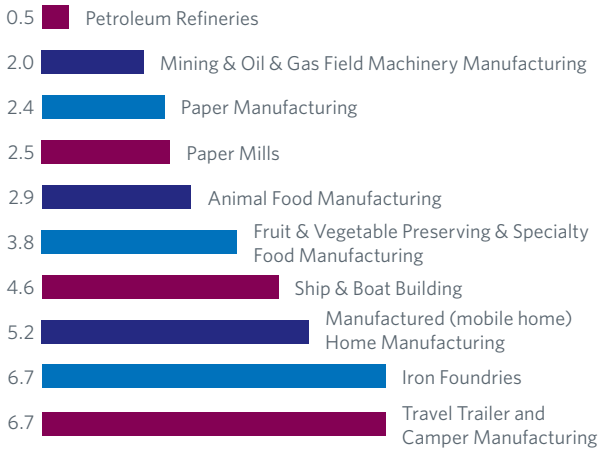
Process Safety

is a management system that prevents any unintended release of energy within refining and petrochemical facilities by applying good operating, engineering, maintenance and other practices to manufacturing processes.

Occupational Safety

refers to the protection of the safety, health and welfare of workers.

Incident Rates of Non-Fatal Injuries or Illnesses Among Manufacturing Sectors[26]

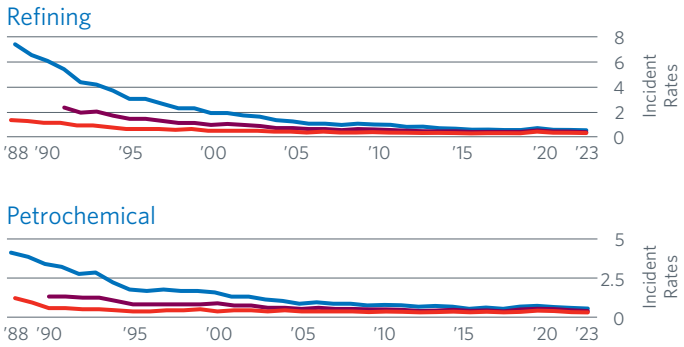


The refining industry's commitment to safety is reflected in its incident performance rates, which have consistently ranked in the top tier of safe performance among the more than 500 manufacturing sectors tracked by the government over the last decade.

Injury & Illness Incident Rates[27]

Radically Reduced Injuries

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



OSHA recordable data compiled by AFPM shows a significant reduction in occupational injuries and illnesses among refining and petrochemical members over the past thirty years.

Refining Process Safety Event Rates[28]

Tier 1 Refinery Process Safety Event Rates

- Refining
- 5-year Rolling Average

Tier 2 Refinery Process Safety Event Rates

- Refining
- 5-year Rolling Average

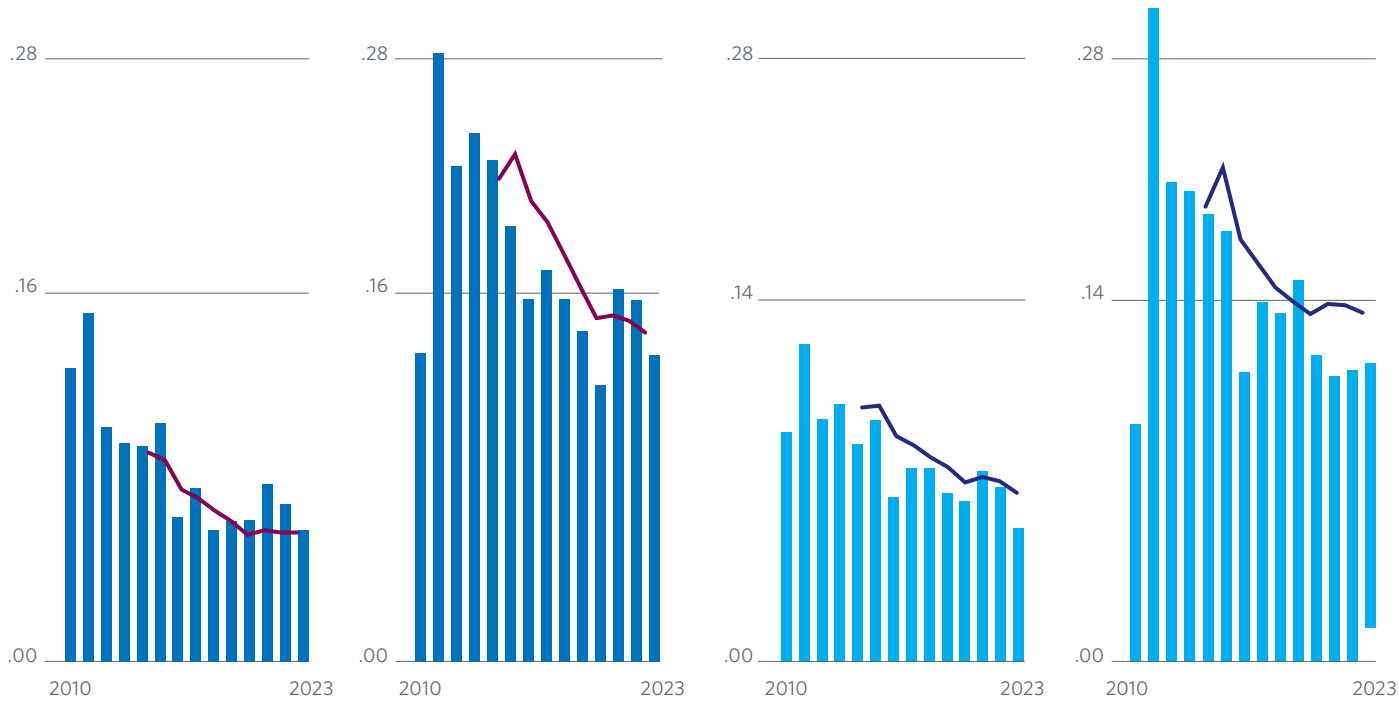
Petrochemical Process Safety Event Rates[29]

Tier 1 Petrochemical Process Safety Event Rates

- Petrochemical
- 5-year Rolling Average

Tier 2 Petrochemical Process Safety Event Rates

- Petrochemical
- 5-year Rolling Average



The refining and petrochemical industries strong focus on process safety events have resulted in regular reductions in recent years.

Enhancing Safety Through Collaboration

Collaboration is critical to the success of any project or organization. We learn and improve by bringing people together from different companies, diverse professional experiences and knowledge backgrounds. Our programs unite people to share knowledge and technology advancements to continually improve the safety, reliability and sustainability of the refining and petrochemical industries.

We work with government agencies to share information and enhance safety, including the Occupational Safety and Health Administration (OSHA), the Chemical Safety Board (CSB) and the EPA.

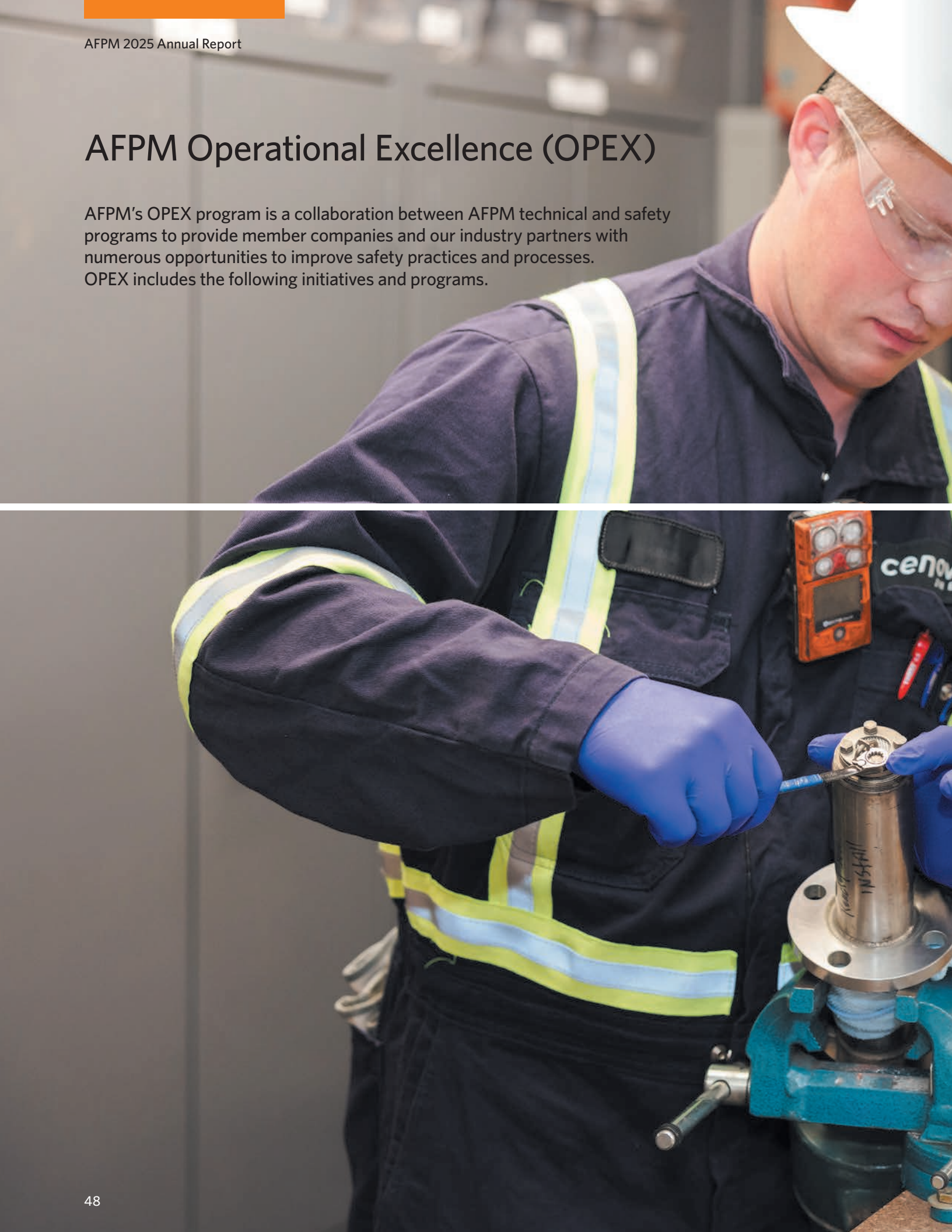
OSHA®

CSB

EPA

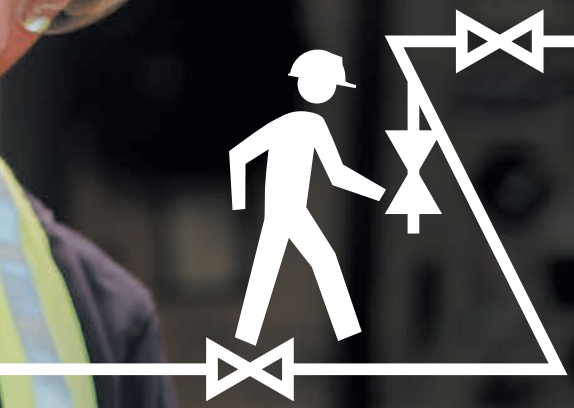
AFPM Operational Excellence (OPEX)

AFPM's OPEX program is a collaboration between AFPM technical and safety programs to provide member companies and our industry partners with numerous opportunities to improve safety practices and processes. OPEX includes the following initiatives and programs.



Advancing Process Safety Programs

Advancing Process Safety (APS) is AFPM's flagship safety program. AFPM, in collaboration with American Petroleum Institute (API), developed this groundbreaking program 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 improve process safety at facilities, this voluntary program has grown to include a suite of resources that facilitate the sharing of learnings and information.



AFPM's APS Programs include:

- **Walk the Line:** AFPM's human performance program that provides operators with tools and resources to prevent common incidents and improve workplace performance and safety.
- **The Process Safety Regional Networks:** Seven regional information-sharing networks that enable process safety professionals to collaborate at the site and association level to improve overall process safety performance.
- **The Process Safety Site Assessment Program:** AFPM collaboration with the API to facilitate rigorous, independent third-party assessments of written programs and operations that help facilities prevent process safety events.
- **Hazard Identification/Practice Sharing Subgroup:** AFPM member group that develops Hazard Identification and Practice Share documents addressing common industry hazards and good industry practices.
- **The Mechanical Integrity Subgroup:** AFPM/API member group that develops resources to help members keep their equipment and systems working safely and reliably.
- **The Human & Organizational Performance Subgroup:** AFPM/API member group that develops information and tools to improve human performance in operations that aid in reducing the likelihood and consequences of human errors.
- **Industry Learning & Outreach Subgroup:** AFPM member group that collects and analyzes data to identify opportunities for improvement for APS and conducts monthly industry webinars.


AFPM | OpEx
People | Knowledge | Technology
Operational
Darrel Perez
AFPM
STAFF
AFPM
AFPM
AFPM
AFPM

Technical Committees

AFPM's Technical Committees provide a forum for knowledge sharing and identifying opportunities and topics for sharing broadly at our conferences, webinars and other resources. They consist of committees focused on manufacturing safety and health, immersive learning and training, reliability and maintenance planning, control and automation technology process technology, fluid catalytic cracking (FCC), hydroprocessing, coking, gasoline processes, sustainability technologies and hydrofluoric acid alkylation.

Regional Networks

The AFPM Regional Networks fill an essential role, bringing site-level practitioners together to network and share events, learnings and good practices. The regional networks that focus on process safety, occupational safety and hydrofluoric alkylation operations. These events are held in the following regions: Central States · East Coast · Midwest · Eastern Gulf Coast · Rocky Mountain · Pacific Coast · Texas Gulf Coast

FCC Process Safety Resources and Regional Meetings

The FCC Committee develops resources for industry-based learnings from recent FCC incidents. This group has developed webinars, conference sessions and FCC process safety documents. Most notably, the Committee delivers regionally based interactive and experiential one-day training workshops at operating sites throughout the United States.

Safety Bulletins, Hazard ID Documents, Practice Sharing Documents

The AFPM APS Program has developed a means to share important process safety information broadly to our members. Since the program's beginning, hundreds of documents have been created to support AFPM members and includes safety bulletins, a compilation of similar process safety incidents and their learnings, hazard ID documents that list hazard considerations for specific tasks and practice sharing documents provided by member companies for the benefit of improving site practices industrywide.

Live Events and Webinars

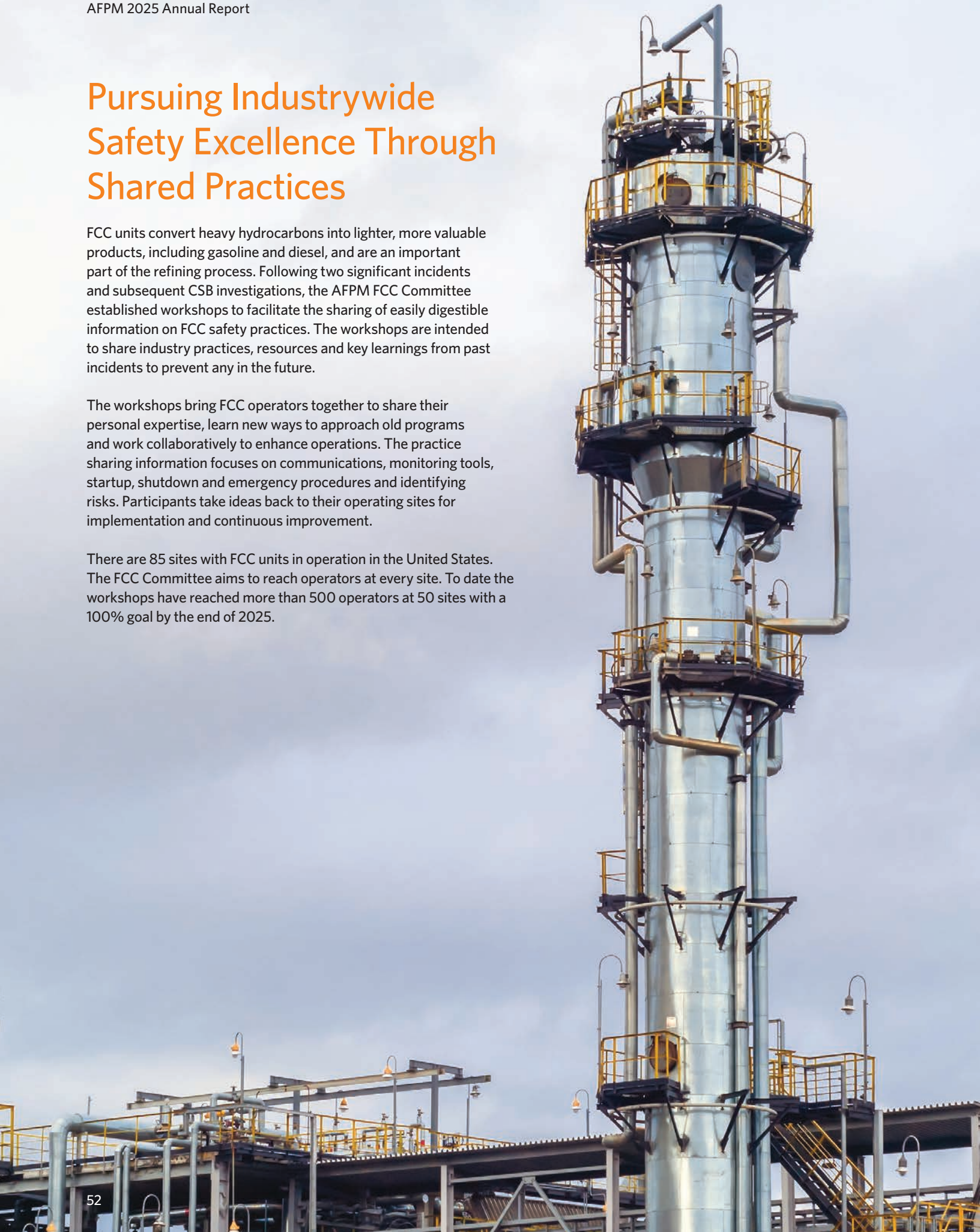
AFPM's live events and webinars are thoughtfully designed to provide state-of-the-industry information in a dynamic and interactive format, encouraging connections between attendees, subject matter experts and exhibitors. Safety is a primary focus of several conferences each year, including the AFPM Safety Conference, Summit and Annual Meeting. In addition to live events, we host webinars throughout the year on a variety of technical and safety topics. Recent events focused on turnarounds, artificial intelligence, alarm management, alkylation, sustainability and unit reliability.

Pursuing Industrywide Safety Excellence Through Shared Practices

FCC units convert heavy hydrocarbons into lighter, more valuable products, including gasoline and diesel, and are an important part of the refining process. Following two significant incidents and subsequent CSB investigations, the AFPM FCC Committee established workshops to facilitate the sharing of easily digestible information on FCC safety practices. The workshops are intended to share industry practices, resources and key learnings from past incidents to prevent any in the future.

The workshops bring FCC operators together to share their personal expertise, learn new ways to approach old programs and work collaboratively to enhance operations. The practice sharing information focuses on communications, monitoring tools, startup, shutdown and emergency procedures and identifying risks. Participants take ideas back to their operating sites for implementation and continuous improvement.

There are 85 sites with FCC units in operation in the United States. The FCC Committee aims to reach operators at every site. To date the workshops have reached more than 500 operators at 50 sites with a 100% goal by the end of 2025.



Occupational Safety Programs

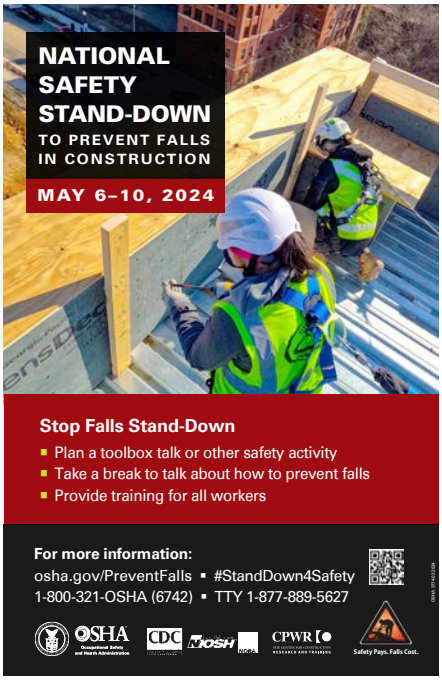
AFPM Occupational Safety programs and trainings are geared toward preventing injuries in our facilities. We use incident data provided by our members to identify and address opportunities for industrywide improvement and then build and share tools that address those issues. Our Occupational Safety Regional Networks facilitate information sharing, including lessons learned to improve the overall safety of the industries. Recently, we have focused on good energy isolation practices, practices that help to minimize unplanned or uncontrolled releases of electrical, mechanical, hydraulic, pneumatic, chemical, thermal and other energy sources and ultimately reduce injuries and loss of primary containment events.

Contractor Engagement

Our industry workforce is made up of employees at both owner-operator and contractor companies. Every one of these workers are essential participants in the safe and efficient operation of our facilities. In recent years the AFPM Safety & Health Committee focused on re-engaging the contractor workforce in our programs and events, most recently by expanding the suite of safety programs offered to our contractor workforce.

This collaboration includes contractor participation in the AFPM Occupational Safety Regional Networks, the sharing of safety-enhancing materials including OPEX resources and OSHA National Stand-Down to Prevent Falls materials, and the creation of safety conference operator-contractor focused sessions and panels. AFPM also continues to recognize contributions to industry safety with the Contractor Safety Awards. Last year AFPM presented 356 contractor safety achievement awards in recognition of the outstanding service contractors provided to member companies.

This important industry-worker group provides an added level of information and expertise on topics that impact the workforce and helps to enhance our project initiatives, Safety Conference content and engagement and occupational safety programs participation.



"AFPM's focus on contractor engagement directly supports our operational goals at Turner Industries. A well-trained and safety-conscious contractor workforce translates to increased efficiency and improved project execution. Access to AFPM's safety resource information ensures that everyone working at any site across the country is armed with the knowledge necessary to work safely."

—Stephen M. Toups
Chief Executive Officer
Turner Industries Group, LLC

"AFPM has made significant progress in amplifying the voice of contractors within the industry. Contractor companies are a vital part of the fuel and petrochemical manufacturing community, and AFPM has taken meaningful steps to gather our input, ensuring we are effectively engaged and represented. Both Total Safety and I have already seen the positive outcomes of this strengthened collaboration and look forward to continued engagement in the future."

— Rick Pitman
Senior Vice President
HSEQT, Total Safety

AFPM Stands with OSHA to Prevent Falls

According to OSHA, the Bureau of Labor Statistics and AFPM's Incident Classification Matrix report, falls from height—four feet or higher—consistently rank among the top causes of workplace injuries and fatalities. OSHA is combatting this issue with its National Safety Stand-Down to Prevent Falls week: a week dedicated to raising awareness to improve safety.

AFPM and the AFPM Safety & Health Committee voluntarily participated last year by sharing related practices and information for employees to prevent falling while working at heights. Companies contributed materials that were shared industrywide and focused on inspecting fall protection equipment before use, properly securing tools and materials, and safe work practices when climbing, descending and working from ladders.

"Safety is not proprietary throughout the refining and petrochemical industries. When we can share practices and address risks of working at height across industry, everyone benefits."

— Lara Swett
AFPM Vice President of Technical Services

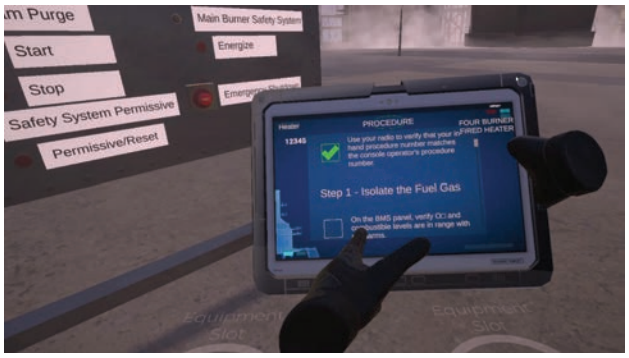
Refiners Protect their Communities

"It's amazing to see how much we've transformed as an industry. We're constantly pushing forward, creating better products for our customers and our community. We use VR technology to train our employees on real-world hazards they can't experience in the field. We use mobile devices and AI to go out and see what is going on with our equipment in real time. We know as an industry that we can't stand still. We need to be reliable and focus on safety because that's our license to operate."

— Bjorn Olson
Operations Learning Capability Lead
Flint Hills Resources, Pine Bend Refinery

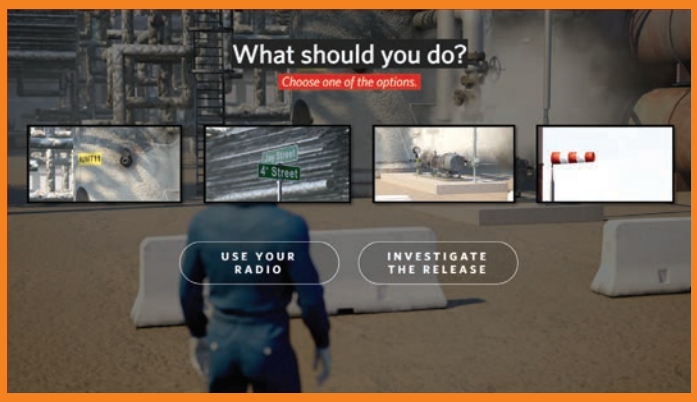
Immersive Learning Programs

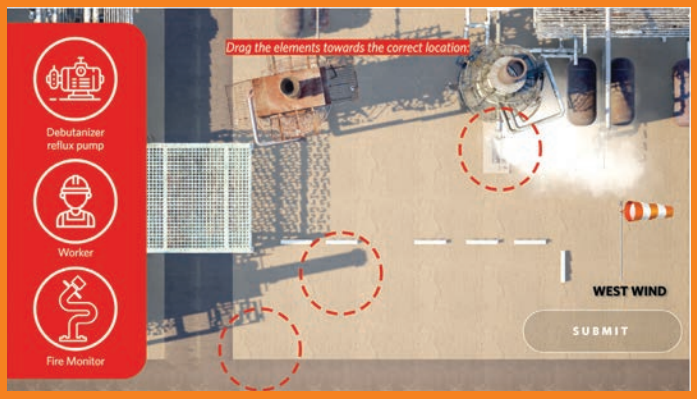
AFPM and its Immersive Learning Committee provide a forum to share knowledge around the quickly evolving area of immersive learning and training. The Immersive Learning program is a teaching mechanism that supports all safety disciplines and includes highly interactive technologies like virtual reality (VR) and augmented reality to improve performance and safety, while also reducing training time. This group developed the first AFPM VR simulation, a complex training tool replicating the process for lighting a fired heater from a cold start, a key facility operation for which hands-on, in-the-field training is difficult due to the potential consequences of inaccurate execution.



Virtual Reality Fired Heater Simulation

AFPM's Immersive Learning Committee developed a Virtual Reality Fired Heater Simulation to enhance training for refinery and petrochemical facility employees. This VR tool simulates the complex process of starting a fired heater from a cold state, allowing trainees to practice critical procedures in a safe environment. The simulation enables users to experience and learn how to navigate low frequency, high-consequence scenarios without real-world impacts, improving training effectiveness and knowledge retention.





First 5 Minutes

The actions taken by facility personnel within the first five minutes of an unexpected release of hazardous materials are crucial in determining the safety outcomes of the event. As part of our safety programs, AFPM created computer-based training (CBT) simulations to enhance employee response during this critical time. This content includes a video summary, interactive video and eLearning CBT and allows employees to experience simulated emergencies, make decisions and see the results of their choices. The materials reinforce critical thinking and decision-making skills, providing a memorable and hands-on learning experience for facility personnel.

AFPM Honors Industry Safety Leaders

The Annual AFPM Safety Awards are considered the refining and petrochemical industries' premier safety awards. They are part of a comprehensive program developed by the AFPM Safety & Health Committee to promote safe operations in our industries and recognize facilities that have outstanding occupational and process safety performance.

In 2024, the following AFPM facilities were awarded the Distinguished Safety Award, the highest honor:

- Marathon Petroleum Company — Canton Refinery
- Marathon Petroleum Company — Robinson Refinery
- Phillips 66 — San Francisco Refinery
- Phillips 66 — Sweeny Refinery

Security and Emergency Response

Security and Emergency Response

U.S. refiners and petrochemical manufacturers work diligently to protect their facilities and the people working in and around them in an ever-changing threat landscape. They apply a layered, fluid approach to security that includes regular communication with federal, state and local governments and strict adherence to regulations to protect our nation's critical energy infrastructure.

Collaboration to Enhance Security

Collaboration across our industries and with trusted partners is critical to the continued success in maintaining secure operations. AFPM and our members maintain strong partnerships with the federal government and other groups in the chemical, oil and natural gas industries to identify potential threats, develop new protocols and further enhance our security systems to protect our nation's critical infrastructure.

Working together, AFPM and our members participate in the following councils and working groups to share information and practices.

- Chemical Sector Coordinating Council: self-organized and self-governed council that enables critical infrastructure owners and operators, their trade associations and other industry representatives to interact on a wide range of sector-specific strategies, policies and activities to address the critical infrastructure security and resilience policies and efforts for the chemical sector.
- Industrial Control Systems Joint Working Group: industry and the Department of Homeland Security working group to facilitate information sharing, reduce the risk to the nation's industrial control systems and continue and enhance the collaborative efforts of these systems. This group provides a vehicle for communicating and partnering across all critical infrastructure sectors between the federal agencies and departments, as well as private asset owners and operators of industrial control systems.
- National Maritime Security Advisory Committee: industry and government advisory committee that makes recommendations to the United States Coast Guard (USCG) on port security issues and to the Transportation Worker Identification Credentials (TWIC) Reader Workgroup to revise and improve the TWIC Reader Rule to enhance port and facility security.
- Oil and Natural Gas Subsector Coordinating Council: self-organized, self-governed body that facilitates collaboration among critical infrastructure owners, operators, trade associations and industry representatives. It focuses on sector-specific strategies, policies and activities to enhance the security and resilience of the oil and natural gas sectors.
- Small Unmanned Aircraft Systems (sUAS) Security Critical Infrastructure Partnership Advisory Council Working Group: public and private sector advisory group that develops best practices and recommendations on mitigating risk to critical infrastructure posed by sUAS and makes recommendations to the federal government on actionable, reliable and scalable risk mitigation solutions for sUAS threats.

Information technology (IT)

IT is a broad term that covers software (data/information processing) and includes endpoint devices like computers, servers and all that is encompassed within.

Operational technology (OT)

OT is responsible for managing and controlling systems.

Cybersecurity in the Refining and Petrochemical Industries

The future of the refining and petrochemical industries relies on investing and maintaining a healthy cybersecurity system and having tools in place to monitor, detect, deter and recover from cyber-attacks.

Our members employ security programs that are risk-based, flexible and allow them to be responsive to threats. Comprehensive security measures are in place that cover both information technology and operational technology.

We also work closely with government agencies and other critical infrastructure groups to develop strategic plans that help to identify and eliminate cybersecurity disruptions. Many of our members' sites are subject to the Maritime Transportation Security Act and Transportation Security Administration pipeline cyber security directives. They had previously also been subject to the Chemical Facility Anti-Terrorism Standards (CFATS); however, this effective program lapsed in 2023 and has yet to be reauthorized by Congress.

Drone Monitoring

Drones, or unmanned aircraft systems (UAS), are used in the refining, petrochemical and midstream industries for a variety of security and safety reasons. For security they are used for surveillance, where users monitor and look for threats like vandalism, theft and trespassers, and to monitor access points to ensure only authorized personnel are on site. Refineries also use counter-UAS detection technology to provide early alerts when unauthorized drones enter restricted airspace. For some sites, this technology helps to reduce reliance on physical security measures like guards or perimeter fencing.

They also enhance safety at facilities by helping to identify and mitigate risks and reduce human exposure to hazardous environments. They enhance emergency responsiveness by replacing human observers in dangerous conditions and can find hazards not typical of human observation that humans might miss. Drones can also be equipped with high-definition cameras and night vision capabilities to provide around-the-clock protection.

More recently, companies are advancing drone monitoring capabilities by introducing artificial intelligence (AI). Through continuous learning, AI identifies what is right and wrong, allowing it to spot anomalies at facilities and near pipelines. For example, a drone could identify a hole in a fence and send notice that an area needs to be investigated. The extent to which drones can be used is limitless and provides our facilities with an added layer of security and safety.

The Value of CFATS

The CFATS program is widely regarded as a smart regulation that helped to safeguard the country. It established a performance-based program for chemical facilities to protect against a variety of threats from terrorism to cyberattacks.

The program provided an avenue for the private sector to cooperate through a uniform, national chemical facility security program. It offered facility risk assessments, guidance to companies about their security plans and allowed facilities to vet personnel against the national terrorist screening database. When in use, it vetted more than 9,000 new personnel each month. Although the program expired in July 2023, AFPM and other industry trade groups continue to request that Congress reinstate this highly effective program.

Emergency Response

AFPM members have robust preparedness plans in place to protect facilities from safety and security risks and to lessen potential environmental impacts due to extreme weather events. These plans are regularly reviewed and adjusted to ensure that they are enhanced to include lessons learned from past events, which include hurricanes, flooding, earthquakes and freezing conditions.

Past extreme weather events have led to operational changes that include elevating control room pumps and electrical equipment to withstand flooding, the addition of redundant power supplies and generators, and increased on-site containment facilities to lessen the chance of materials being released into the environment. Some members are even working on AI modeling for better hurricane prediction in the future.

AFPM also works with industry to produce interactive materials to ensure safe operations during an unexpected cold snap, like what occurred with winter storm Uri in 2021. They include safety bulletins and practice sharing information on winterization procedures, temporary shelter and fall prevention.

After extreme events have passed, the fuel and petrochemical industries begin to provide financial assistance and in-kind donations and personally volunteer to help affected communities recover and rebuild.

- After an EF4 tornado struck the town of Rolling Fork, Mississippi, **Ergon** employees donated food, money, time and other resources to help with food preparation and serving meals to first responders, law enforcement, linemen and residents. Ergon fed over more than 8,000 people over the course of three days, and with Ergon matching employee donations they were able to raise $60,000.

- **Phillips 66** provides financial support to Operation BBQ Relief, an organization that served thousands of barbeque meals to first responders, at-risk community members and line workers repairing the electric grid after Hurricane Beryl knocked out power for Gulf Coast residents on July 8, 2024. Phillips 66 employees also volunteered at Lake Jackson and helped deliver meals to other Houston-area communities.

- After the May 2024 derecho hit Houston, **CITGO** donated $100,000 to the Houston Food Bank, Baker Ripley, Rebuilding Together Houston and Catholic Charities of the Archdiocese of Galveston-Houston to help with recovery efforts.

- **Valero**'s Houston refinery hosted the Salvation Army's supply distribution event after Hurricane Beryl, with Valero employees volunteering alongside Salvation Army staff to distribute 950 meals, 930 snacks, 1,130 drinks, 386 cleanup kits and 80 food boxes to nearby community residents.

Workforce and Community Development

Workforce and Community

The U.S. refining, petrochemical and midstream industries support millions of American jobs. We offer our employees more than a paycheck — we provide opportunities to advance their careers and skills. We work to create a diverse and inclusive workforce where our people feel supported and see a long-term future in our industries. And we work to get the next generation the training and education they need to have long careers with us. We're in it for the long haul and we want them to be, too.

Our industries play a vital role in addressing the economic and social needs of the communities we serve. We actively support organizations and programs that improve the lives of our neighbors, including initiatives for local businesses, education, safety and assistance for first responders.

Workforce Engagement

AFPM members recognize that the well-being and professional development of their workforce are essential for future success. They are dedicated to recognizing employee strengths, promoting growth and advancing diversity and inclusion. Many companies have implemented career development programs and skills training to support advancement for all employees at every level.

- **Plains All American Pipeline**'s employee-led Cultivating Connections network aims to encourage inclusion at Plains and industrywide through mentoring, networking, sharing experiences and furthering leadership development. To expand its reach, Plains launched a young professionals' group to provide development opportunities to early-career employees.
- **W.R. Grace** has a three-year Manufacturing Leadership Program, which offers recent bachelor's and master's graduates a chance to explore different operations experiences under the guidance of a senior-level mentor. Participants rotate through three year-long assignments in disciplines such as process engineering, supply chain, project engineering and environmental, health and safety, while receiving professional training and development to optimize leadership skills.
- Over 5,000 employees belong to **Marathon Petroleum**'s 76 employee network group chapters, representing seven groups — Asian, Black, Disability, Hispanic, LGBTQ+, Veterans and Women. The groups are led by employees with involvement and support from executive sponsors.
- **Phillips 66** is regularly recognized for its support of veteran hires, including being named a Best for Vets Employer by the Military Times, with a number oneranking for all refiners and a top 10 ranking for all employers in Texas. According to a third-party administered survey, 9% of employees self-identified as veterans.
- Within the **INEOS** young graduate program, graduates are assigned a senior manager as a mentor and attend corporate events in the first and third years of the program. These provide valuable networking opportunities and allow graduates to meet senior leaders from across INEOS.

Future Workforce

AFPM members have established and support career development programs, scholarships, skills training and science, technology, engineering and math-focused (STEM-focused) education to help prepare the next generation for roles in the refining and petrochemical industries.

- **Valero** donated $1 million to Texas Biomed to create the Valero Young Scientist Program, a four-week summer program to introduce high school students to researchers, teachers and graduate students at Texas Biomed to inspire local students to become the scientists of tomorrow.

- **LyondellBasell** joined the Discovery Education STEM Career Coalition to help K-12 educators connect students to STEM. LyondellBasell also helped found the Sustainability Education Coalition, which empowers K-12 students to serve as sustainability ambassadors by providing the necessary resources for students to take responsible actions supporting sustainability.

- In 2024, **Motiva** awarded 43 high school graduates from Southeast Texas with $260,000 in scholarships as a part of its Motiva Excellence in Education Scholarship. Recipients receive scholarship funds to aid in their pursuit of a STEM or business-related undergraduate, associate or vocational degree. Since its inception, Motiva has awarded more than $3.2 million to local students.

- **Ketjen** employees at its Pasadena and Bayport, Texas, sites volunteer as a part of a mentoring program at Jackson Intermediate School in Pasadena that connects mentors with at-risk students. Ketjen employees are paired with individual students, and mentoring sessions take place once a month over a pizza lunch sponsored by Ketjen where employees and community members give presentations on different career paths and employees share advice on how to reach students' goals.

- The **Cenovus Lima Refinery** is the first foundational partner of the Ohio State University at Lima's new Engineering Education and Manufacturing Center. The 40,000-square-foot facility is designed to produce the next generation of engineers, equipping students with exposure to the latest equipment and providing manufacturers with local talent trained in manufacturing.

Community Investment

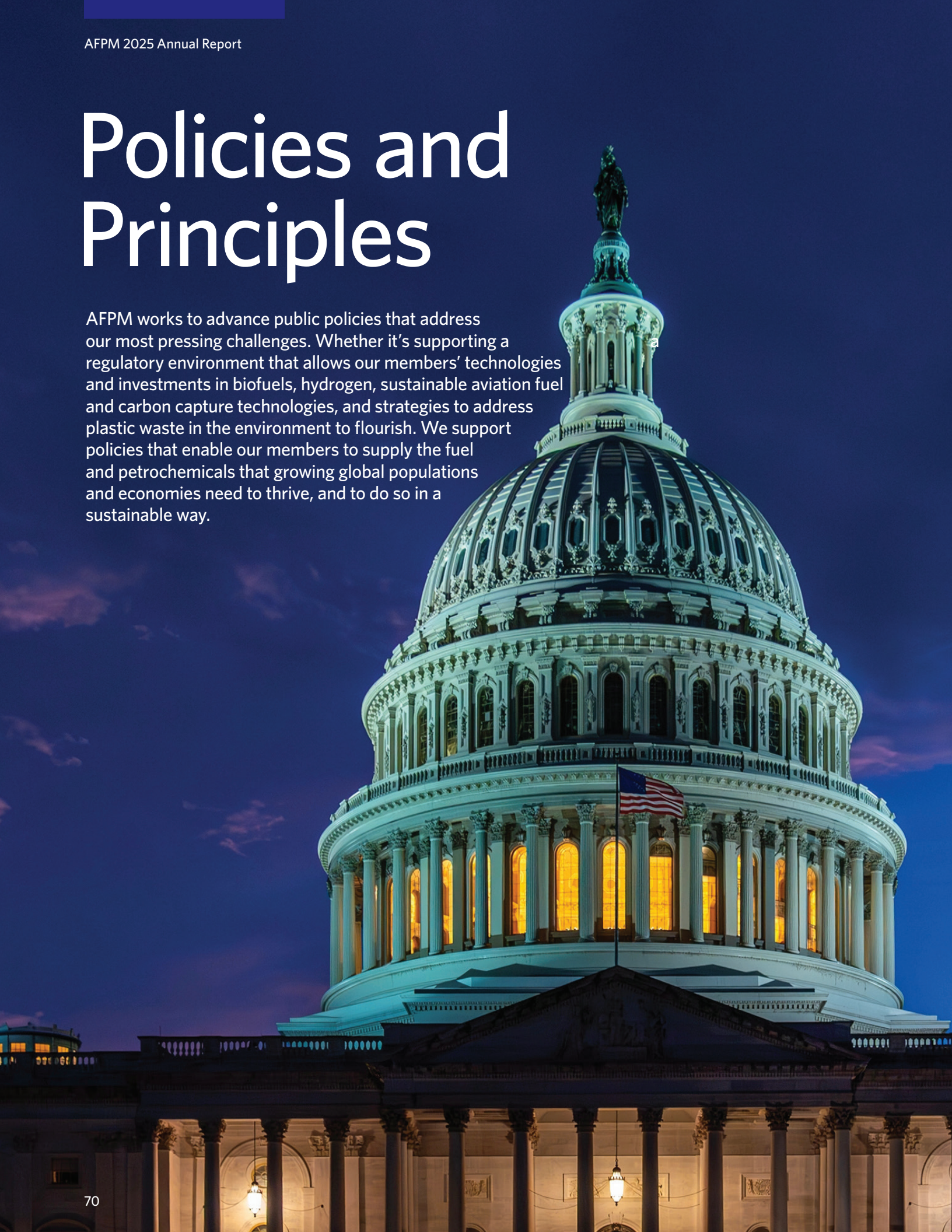
Refiners, petrochemical manufacturers and our midstream partners are heavily invested in the communities around them. They are committed to open and transparent communications with their neighbors and support their communities by contributing financially and through volunteerism. They invest in meeting the everyday needs of their communities, support local education and bolster emergency services.

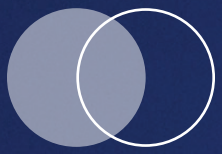
- **Plains All American Pipeline** employees volunteered over 7,900 hours on projects such as revitalizing the Black River Recreation Area in New Mexico in partnership with the Bureau of Land Management, packing pet food to help local seniors through the "Meals on Wheels AniMeals'" program in Houston and filling mobile pantry boxes for the Food Bank of Wyoming before the holidays.
- More than 300 **Valero** volunteers participated in the 2023 United Way Day of Caring, helping to renovate the 80-acre campus at Boysville Children's Home and Shelter in San Antonio, which provides a safe environment for over 300 children affected by abuse, neglect and family crisis. Valero volunteers assembled and installed new beds and cribs, painted outdoor and indoor cottages, landscaped, and cleaned kitchens and bathrooms throughout the campus. Through the years, Valero has invested nearly $2 million in Boysville.
- **Monroe Energy** has over 70 Volunteer Emergency Response Team members and participates in mutual aid agreements with organizations throughout the Delaware River Corridor while also working with local, county and state emergency response organizations.
- **CountryMark** conducts more than 40 public awareness meetings each year to educate first responders, local emergency planning committees, public officials, excavators and students on pipeline safety.
- **Flint Hills Resources** has donated more than $1.8 million to emergency first responders for training and the purchase of life-saving equipment.
- **HF Sinclair** raised over $635,000 through its Fueling Folds of Honor campaign, where a portion of fuel purchased at participating Sinclair-branded retail locations and three dollars for every new user of DINOPAY®—a mobile payment app—was set aside for the initiative. The funds go to support the spouses and children of fallen or disabled veterans and first responders by providing educational scholarships, with an estimated 127 educational scholarships of $5,000 each going to families in areas served by Sinclair stations.

Policies and Principles

Policies and Principles

AFPM works to advance public policies that address our most pressing challenges. Whether it's supporting a regulatory environment that allows our members' technologies and investments in biofuels, hydrogen, sustainable aviation fuel and carbon capture technologies, and strategies to address plastic waste in the environment to flourish. We support 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 a sustainable way.





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.

Balance Needs for All Americans

U.S. policies should balance the need for affordable and reliable fuels and a growing economy with sound environmental policies. The essential role and many societal benefits that petroleum fuels, natural gas and petrochemicals provide our nation and the world should not be ignored.

Promote Competition

The refining and petrochemical industries support policies that promote innovation, increase competition and achieve market-based solutions to society's challenges. Policymakers should also look to ensure U.S. companies operating abroad are treated fairly through a system of trade rules that facilitate cooperation and regulatory alignment and reflect the reality of an integrated energy and petrochemical market. Finally, policymakers must ensure the full potential of the modernized tax code is realized to spur growth now and into the future.

Strengthen our Foundation

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

AFPM Climate Policy Principles

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.

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 petrochemical 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.

Plastic Waste Principles

AFPM approaches the challenges of global plastic waste by addressing the many aspects of this complex issue. Ultimately, our solutions always acknowledge the tremendous long-term value of plastic products, while considering data-driven innovations that promote advanced recycling solutions and remove regulatory barriers to widescale adoption of such technologies.

Specifically, we advocate for:

Developing a national framework to eliminate plastic waste in the environment and grow the circular economy for plastics.

Working collaboratively across the plastics value chain and with governments to encourage the responsible disposal of plastic products and the recycling, reuse and recovery of plastic waste on a global scale. This includes increased funding of state and local waste collection programs to better source and collect plastic waste.

Supporting the innovation and development of plastic waste repurposing technologies that have the potential to recover plastic waste and transform it into usable materials. This includes removing regulatory barriers for new facilities that will allow for the continued expansion of advanced recycling capabilities.

Ensuring the regulatory classification for plastic waste as a manufacturing feedstock, which simplifies the process and reduces regulatory hurdles for companies processing plastic; and proper accounting and tracking of recycled content, allowing companies to set clear goals and to consistently track their recycling efforts.

Board, Members and Resources

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Chairman & Chief Executive Officer
Plains All American Pipeline, L.P.
Houston, Texas

AFPM Vice Chairman
Mark Lashier
President & Chief Executive Officer
Phillips 66
Houston, Texas

AFPM Treasurer
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Executive Vice President,
Manufacturing & Projects
Chevron Phillips Chemical Company LP
The Woodlands, Texas

Chris Cavote
President, Manufacturing
Chevron U.S.A. Inc.
San Ramon, California

Kim Foley
Executive Vice President, O&P,
Refining & Supply Chain
LyondellBasell Industries
Houston, Texas

Tim Go
Chief Executive Officer and President
HF Sinclair
Dallas, Texas

Neil Hansen
Senior Vice President, Energy Products
Exxon Mobil Corporation
Spring, Texas

Matt Lucey
President & Chief Executive Officer
PBF Energy Inc.
Parsippany, New Jersey

Maryann Mannen
President and CEO
Marathon Petroleum Corporation
Findlay, Ohio

Francis Murphy
President and CEO
Flint Hills Resources, LC
Wichita, Kansas

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

Lane Riggs
Chief Executive Officer,
President and Director
Valero Energy Corporation
San Antonio, Texas

Jeff Rinker
President and Chief Executive Officer
Motiva Enterprises LLC
Dallas, Texas

Stevie Toups (Associate Liaison)
Chief Executive Officer
Turner Industries Group, LLC
Baton Rouge, Louisiana

Jeff Warmann
Chief Executive Officer and President
Monroe Energy, LLC
Trainer, Pennsylvania

Eric Zimpfer
Head of Downstream
Cenovus Energy Inc.
Calgary, California

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.

American Refining Group, Inc.
Brian Zolkos

Arkema Inc.
Mike Scott

Baker Hughes
Rawle Bisamber

BASF Corporation
Gulay Serhatkulu

Big West Oil, LLC
Michael Swanson

Boardwalk Louisiana Midstream LLC
Kevin Miller

Cenovus U.S. Corporation
Eric Zimpfer

Cheniere Energy
Maas Hinz

Chevron Phillips Chemical Company LP
Bryan Canfield

Chevron U.S.A. Inc.
Chris Cavote

CHS Inc.
John Traeger

CITGO Petroleum Corporation
Dennis Willig

Countrymark Cooperative Holding Corporation
Matthew Smorch

Delek US
Joseph Israel

Dow
Kevin Kolevar

Energy Transfer
R.B. Herrscher

Enterprise Products Operating LLC
Chris D'Anna

Ergon, Inc.
Lance Puckett

ExxonMobil Product Solutions Company
Jason Duncan

ExxonMobil Product Solutions Company
Neil Hansen

Flint Hills Resources, LLC
Francis Murphy

Formosa Plastics Corporation, USA
Ken Mounger

HF Sinclair Corporation
Timothy Go

Honeywell UOP
Rajeswar Gattupalli

Hunt Refining Company
David Coleman

Huntsman Corporation
Jan Buberl

INEOS Olefins & Polymers USA
Michael Nagle

INVISTA
Brook Vickery

Ketjen Corporation
Michael Simmons

LyondellBasell Industries
Kim Foley

LyondellBasell Industries
Torkel Rhenman

Marathon Petroleum Corporation
Timothy Aydt

Monroe Energy, LLC
Jeff Warmann

Motiva Enterprises LLC
Jeffrey Rinker

Nalco Water
Dennis Garbarino

NuStar Energy LP
Brad Barron

Occidental Chemical Corporation
Wade Alleman

ONEOK
Mark Roles

OQ Chemicals Corporation
Kyle Hendrix

Par Pacific Holdings, Inc
Richard Creamer

PBF Energy Inc.
Matt Lucey

PEMEX Deer Park
Guy Hackwell

Phillips 66
Mark Lashier

Placid Refining Company
Robert Beadle

Plains All American Pipeline, L.P.
Willie Chiang

SABIC
Lin Huang

Solenis LLC
Patrick Regan

Suncor Energy Inc.
Muhammad Ehtisham

The International Group, Inc.
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TPC Group
Edward Dineen

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Brad Crocker

Valero Energy Corporation
Gary Simmons

Valero Energy Corporation
Lane Riggs

Veolia Water Technologies & Solutions
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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.

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- 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

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- AFPM Petrochemical Surveys
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- Annual Meeting Papers
- Cybersecurity Conference Papers
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- 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. In addition to our standing 27 committees and subcommittees, we have a series of regional networks and working groups 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 Toups, Turner Industries Group, LLC
AFPM Secretary: Laura Hornbuckle

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

The **Crude/Coking Process Technology Committee** promotes safe, reliable and sustainable operations in feedstock handling for crude distillation, desalting and coker units in refineries.
Chair: Hector Gamboa-Arizpe, CITGO Petroleum Corporation
AFPM Secretary: Yvette Fowler

The **Cybersecurity Committee** provides information and recommendations on matters pertaining to cybersecurity and cyber threats.
Chair: Shiva Krishnasamy, Motiva Enterprises LLC
AFPM Secretary: Jeff Gunnulfsen

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: Hannah Placzek, Marathon Petroleum Corporation
AFPM Secretary: Leslie Bellas

The **FCC Process Technology Committee** provides a technical forum to help ensure that our individual fluid catalytic cracking units (FCCUs) operate in the safest manner possible.
Chair: Nikolas Larsen, Marathon Petroleum Corporation
AFPM Secretary: Yvette Fowler

The **Fuels Committee** provides information and policy recommendations concerning legislative, regulatory and motor fuel specification developments.
Chair: Keesha Esqueda, Flint Hills Resources
AFPM Secretary: Leslie Bellas

The **Gasoline Processes Committee** supports, or leads if appropriate, industry's adaptation to the changing demand and or characteristics of the U.S. gasoline stream.
Chair: Rhett Finch, Marathon Petroleum Corporation
AFPM Secretary: Julie McQueen-Foster

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: Stephen Higley, Cenovus Energy Inc.
AFPM Secretary: Aaron Ringel

The **Hydroprocessing Process Technology Committee** promotes safe and reliable operations within the hydroprocessing community and to ensure safe and sustainable operations.
Chair: Montri Vichailak, Marathon Petroleum Corporation
AFPM Secretary: Yvette Fowler

The **Hydrofluoric Acid Alkylation Committee** provides a forum for member companies to share and develop technical information and tools to promote the safe operation, maintenance and continuous improvement of HF Alkylation Units (HFAUs).
Chair: Liana Siegel, Marathon Petroleum Corporation
AFPM Secretary: Julie McQueen-Foster

The **Immersive Learning Committee** provides a forum for the exchange of information on immersive learning, as well as research and development of training tools and solutions that utilize existing and emerging technologies to enhance member training programs.
Chair: Timothy Chappel, ExxonMobil Corporation
AFPM Secretary: Abby Esterly

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: Mark Lashier, Phillips 66
AFPM Secretary: Geoff Moody

The **Labor Relations and Human Resources Committee** facilitates the exchange of information on matters related to industrial and labor relations, human resources practices and collective bargaining.
Chair: Sharron Booker, LyondellBasell Industries
AFPM Secretary: Tommy Martucci

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: Dan Syphard, Cenovus Energy Inc.
AFPM Secretary: Rich Moskowitz

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: Sterling Neblett, CITGO Petroleum Corporation
AFPM Secretary: Julie McQueen-Foster

The **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: Eric Monger, KBX Logistics
AFPM Secretary: Rob Benedict

The **Operational Planning Control & Automation Technologies Committee** focuses on sharing practical experience in application management, and integration of computing technology in the areas of process control and automation, modeling, real-time optimization and internet-based applications.
Chair: Patrick Robinson, PBF Energy Inc.
AFPM Secretary: Tanya Cooper

The **Petrochemical Committee** advises the AFPM Board and staff on current issues of importance to the petrochemical industry.
Chair: Chris D'Anna, Enterprise Products
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: Ryan Macaluso, Motiva Enterprises LLC
AFPM Secretary: Robert Kelsey

Standing Committees and Working Groups

continued

The **Reliability & Maintenance Committee** promotes the exchange of technical information and proven practices related to process plant reliability, maintenance, inspection, procurement, project engineering, turnarounds, procurement and project engineering.
Chair: Dean Roberts, Ergon Refining, Inc.
AFPM Secretary: Tanya Cooper

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: Andy Thompson, Motiva Enterprises, LLC
AFPM Secretary: Jeff Gunnulfsen

The **State and 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: Matt McGlaughlin, Monroe Energy, LLC
AFPM Secretary: Don Thoren

The **Sustainability Technologies Committee** supports industry's growth and sustainability goals by promoting new emerging technologies, providing updated market and regulatory outlooks and shares good practices in engineering and operations of new and retrofit renewable processing units.
Chair: Eric Legare, Chevron U.S.A. Inc
AFPM Secretary: Julie McQueen-Foster

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

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: Lauren Sheehan, Valero Energy Corporation
AFPM Secretary: Aaron Ringel

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.
Chair: Jenny Hebert, Ketjen Corporation
AFPM Secretary: Laura Hornbuckle

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: Tommy Martucci
The **Safety and 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: Larry Webb, Flint Hills Resources, LLC
AFPM Secretary: Mawusi Bridges

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: Jason McGowan, HF Sinclair Corporation
AFPM Secretary: Sharon Linton

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: Kendra Richins, Phillips 66
AFPM Secretary: Sharon Linton

Occupational Safety Regional Networks

Central States Regional Network
Chair: Greg Pinto, HF Sinclair Corporation

East Coast/Mid-West Occupational Safety Regional Network
Chair: Nate Mathias, Marathon Petroleum Corporation

Eastern Gulf Coast Occupational Safety Regional Network
Chair: Alan Parker, Ergon, Inc.

Pacific Coast Occupational Safety Regional Network
Chair: Casey Woods, Valero Energy Corporation

Rocky Mountain Occupational Safety Regional Network
Chair: Brett Humes, Big West Oil, LLC

Texas Gulf Coast Occupational Safety Network
Chair: Chris Nelson, Valero Energy Corporation

The **Hydrofluoric Acid Alkylation Operation Network** provides a forum for the sharing of non-competitive topics between first and second-line supervisors in HF Alkylation units. Topics focus on unit safety, personal and process safety, corrosion, inspection practices, material and equipment reliability as it pertains to safety, industry incidents, mitigation systems and interpretation and use of API RP-751.
Chair: Jimmy Chaplin, CITGO Petroleum Corporation
AFPM Secretary: Julie McQueen-Foster

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: Chris Gallo, Phillips 66
AFPM Secretary: Mawusi Bridges

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: Paul Seyler, Phillips 66
AFPM Secretary: Mawusi Bridges

Practices Sharing
Chair: Michael James, Chevron U.S.A. Inc.
AFPM Secretary: Jasmine Beasley

Industry Learning and Outreach
Chair: Chris Clover, Chevron U.S.A. Inc.
AFPM Secretary: Darrel Perez

The **Process Safety Regional Network Program** provides opportunities for site-level practitioners to network, share events, learnings and good practices with each other in a non-competitive environment in a variety of disciplines.
Chair: Charli Horowitz, Chevron
AFPM Secretary: Jasmine Beasley

Central States Regional Network
Chair: Rhonda Schmidt, HF Sinclair

East Coast Regional Network
Chair: Akaninyene Akpan, Irving Oil

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Walk the Line Subgroup
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AFPM delivers best-in-class meetings and live events that bring together the refining, petrochemical and midstream industries in dynamic and interactive formats. Our annual slate of conferences, workshops and webinars are comprehensive, covering all industry disciplines including management, maintenance, reliability, safety, environment, process technologies, operations, labor relations and security.

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March 2 - 4, 2025
Grand Hyatt
San Antonio, TX

International Petrochemical Conference
March 23 - 25, 2025
Grand Hyatt
San Antonio, TX

Labor Relations / Human Resources Conference
May 6 - 7, 2025
Westin Riverwalk
San Antonio, TX

Security Conference
May 8 - 9, 2025
Westin Riverwalk
San Antonio, TX

National Occupational & Process Safety Conference
May 13 - 15, 2025
Austin Marriott Downtown
Austin, TX

AFPM Summit
August 25 – 28, 2025
Gaylord Texan, Grapevine, TX

Environmental Conference & Exhibition
October 19 – 21, 2025
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Endnotes

1 Oxford Economics, The Economic Contributions of the U.S. Petroleum Refineries Oxford Economics
2 U.S. Energy Information Administration (EIA), Refinery Utilization and Capacity
3 © 2024 Exxon Mobil Corporation
4 © 2024 Exxon Mobil Corporation
5 U.S. Energy Information Administration, Monthly Energy Review, Table 1.3 and 10.1, April 2024, preliminary data
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10 U.S. Energy Information Administration, Petroleum Supply Monthly; and the U.S. Census Bureau
11 Pipeline and Hazardous Materials Safety Administration
12 Association of American Railroads
13 Congressional Research Service, "Inland and Intracoastal Waterways"
14 U.S. Maritime Administration
15 Department of Transportation – Federal Highway Administration, "Our Nation's Highways"
16 U.S. Energy Information Administration
17 U.S. Department of Transportation, Moving Goods in the United States
18 Railway Supply Institute
19 U.S. EPA, Our Nation's Air, Trends Through 2022
20 U.S. Energy Information Administration (EIA)
21 AFPM Petrochemical Statistics
22 U.S. Environmental Protection Agency
23 EPA Toxics Release Inventory (TRI) Program
24 Plains All American Pipeline SR, p. 4
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