EXECUTIVE SUMMARY

Transforming Chemicals Production in Louisiana

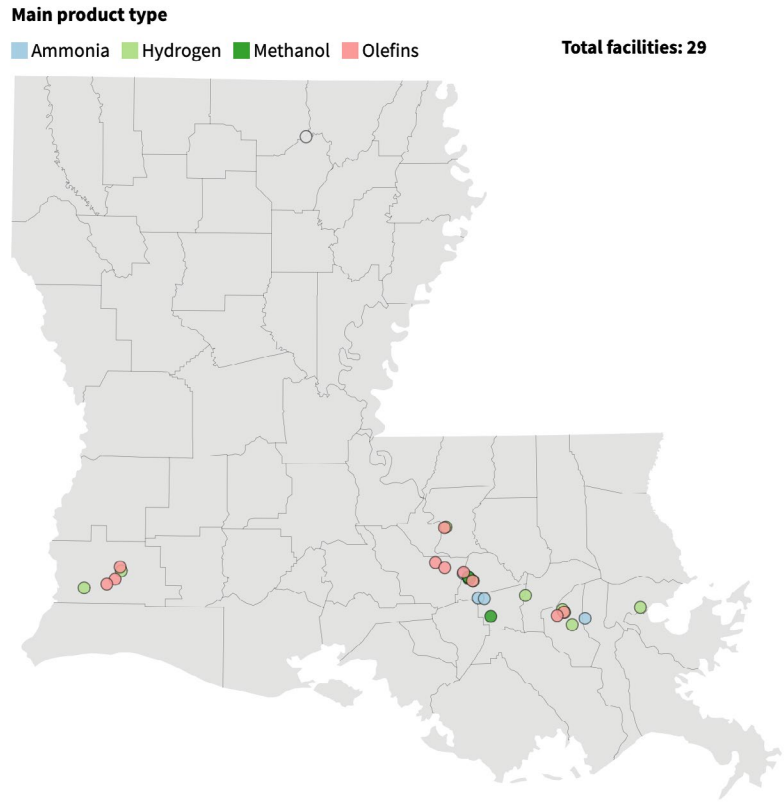
September 2026

Louisiana, a leading chemical manufacturer and exporter in the United States, is at an inflection point. The state can allow facilities to continue operating largely as they do today or help the industry modernize in ways that strengthen global competitiveness, improve public health, and reduce emissions.

Louisiana is home to 29 basic chemical manufacturing facilities that primarily produce hydrogen and olefins, building block chemicals used to manufacture everyday products such as plastics, detergents, and adhesives, as well as a few that produce ammonia and methanol. Some of these facilities have been in operation for several decades, since petrochemical production first began in Louisiana. Chemical facilities in Louisiana are concentrated along the Mississippi River in the state's industrial corridor. The chemical sector is also a major contributor to Louisiana's economy, supporting approximately 29,000 jobs, contributing $22 billion to the national GDP, and accounting for 11% of the state's manufacturing exports.

Collectively, chemical manufacturing facilities in Louisiana release approximately 40 million metric tons of carbon dioxide equivalent (CO_2e) each year, along with significant quantities of criteria and hazardous air pollutants, particularly nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs) and 1,3-butadiene, which contribute to poor air quality and toxic health risks. Globally, market standards are increasingly tracking the

Primary chemicals facilities in Louisiana



emissions intensity of products, signaling growing demand for lower-emissions commodities. By deploying technologies that reduce pollution and emissions from primary chemical production, Louisiana can maintain its competitive advantage in the chemical industry, particularly in growing export markets for low-emissions commodities. Solutions exist today to modernize Louisiana's chemicals industry, delivering reliability and resilience of production processes benefits alongside public health benefits.

AI-Driven Predictive Maintenance

AI-driven predictive maintenance uses sensors and analytics software to monitor high-consequence equipment and identify abnormal vibration, temperature, pressure, or flow patterns before failures cause shutdowns, leaks, venting, or flaring.

~50 events/year *~2 events/facility/year*	**Potential unplanned maintenance events avoided**
$12–$22 million *~$0.4 million–$0.8 million per facility*	**Deployment cost statewide**
~$184 million *~$6.3 million per facility per year*	**Avoided production losses per year**
30,000 tons	**CO_2 avoided per year**
13 tons	**NO_x avoided per year**
57 tons	**VOCs avoided per year**

Low-Leak Natural Gas Procurement

Low-leak natural gas procurement is when chemical producers buying natural gas that is produced, processed, and transported with lower methane leakage, through measurement-based certification standards set by independent, third-party organizations.

Methane intensity can vary by as much as 100 times between the highest-emitting production and an openly certified volume of gas. As such, chemical manufacturers can play an important role in reducing supply chain emissions by demanding low-leak natural gas from their suppliers.

~360 million MMBtu	**Annual natural gas procurement in Louisiana for chemical feedstock and fuel**
1.71%	**Methane intensity baseline** (North American average)
<0.2%	**Methane intensity target**
~104,000 tons	**Methane avoided per year**
~8.6 million tons	**CO_2e avoided per year**
~$22 million	**EPA COBRA health benefits**
Incremental annual cost	**Cost of low-leak gas dependent on type of abatement technology implemented**

NO_x Air Pollution Control

NO_x air pollution controls include low-NO_x burners (LNB), which reduce NO_x formation inside combustion equipment, and selective catalytic reduction (SCR), which removes NO_x from flue gas after combustion.

20,000 tons — **Modeled NO_x baseline per year** (statewide)

LNB installation

- **NO_x reduction:** 1,300 tons/year
- **Cost:** $2 million/year
- **Health benefit:** $30 million/year

SCR installation

- **NO_x reduction:** 2,400 tons/year
- **Cost:** $27 million/year
- **Health benefit:** $56 million/year

Stacked installation

- **NO_x reduction:** 3,700 tons/year
- **Cost:** $29 million/year
- **Health benefit:** $87 million/year

Low-Emissions Hydrogen with CCS

Low-emissions hydrogen is created from hydrogen production units such as steam methane reformers and autothermal reformers that are outfitted with carbon capture equipment; the captured CO_2 is then used or sequestered instead of released into the atmosphere.

7.2 million tons	**Net CO_{2e} avoided per year**
$5.1 billion	**Estimated capital expenditure (capex)** (statewide)
$880 million	**Estimated annual cost** (statewide)
$120/ton	**Cost per ton tCO_2e**
$40/ton	**Cost per tCO_2e (including federal tax incentive)**

Thermal Energy Storage (TES) for Industrial Steam

Thermal energy storage uses electricity to heat a storage medium and later discharges that stored heat to produce steam for industrial process heating.

21 million MMBtu	**Eligible boiler heat per year** (share attributable to conventional boilers in target facilities)
1.4 million tons	**Max CO_2 Reduction Potential per year** (if TES charged with 100% renewable energy)
$30 million –$43 million	**Human health benefits per year** (if TES charged with 100% renewable energy)

Energy Cost Scenario 1: Average 2025 Louisiana Industrial Retail & Gas Prices

- **TES heat cost:** $19/MMBtu
- **Gas-Boiler cost:** $5.4/MMBtu
- **Incremental energy cost increase:** $276 million/year

Energy Cost Scenario 2: Favorable Scenario for TES

- **Electricity assumption:** $30/MWh; all-in electricity price
- **Natural gas assumption:** $7.18/thousand cubic feet (MCF); 2022 high-price case
- **TES Heat Cost:** $9/MMBtu, Gas-Boiler Cost: $8.6/MMBtu
- **Incremental energy Cost increase:** $7 million/year

Policies and market drivers summary

To encourage deployment of these five technologies, Louisiana could undertake policy and market-driving actions for its chemicals industry using a phased approach.

Over the next two years, Louisiana can build capacity within its existing chemicals industry by improving awareness of new technologies, increasing utilization of existing tools, and beginning long-term planning.

Over the next five years, the state can accelerate modernization by upgrading existing industrial assets in ways that reduce pollution and improve project economics.

Over the next decade, Louisiana can embed industrial transformation by implementing an industrial modernization plan and strengthening industrial air permitting and State Implementation Plan protections.

Changing policy and markets will require collaboration between industry, the Louisiana legislature, Louisiana's government agencies, academia, and local communities.

By laying the foundation now, Louisiana can protect the competitive advantage of its chemical industry and ensure it remains the preferred location for the next generation of chemical manufacturing.