The Path to Decarbonization in the United States

Robyn Brooks | The Chlorine Institute

12th International Chlor-Alkali Technology Conference & Exhibition

13-15 May 2025
Barcelona - Spain

Agenda

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Pathways

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Where We Are Now

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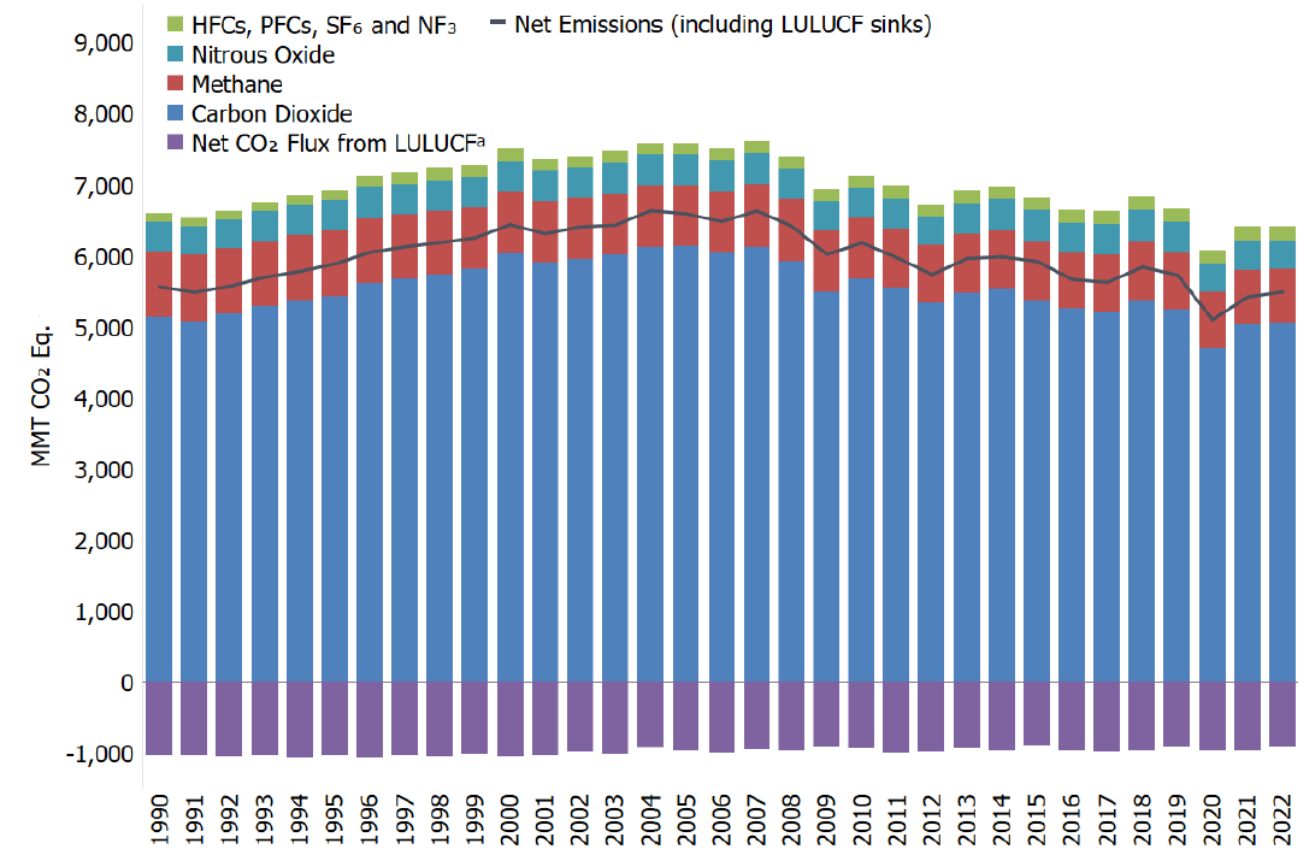
Total Greenhouse Gas (GHG) Emissions in the United States

- In 2022, the U.S. emitted 6,343 million metric tons of CO_2e
- Emissions peaked in 2007
- 3% Decrease since 1990

Figure ES-1: U.S. Greenhouse Gas Emissions and Sinks by Gas



LULUCF =Land Use, Land-Use Change and Forestry

Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2022. U.S. Environmental Protection Agency

U.S. Economy GHG Emissions by Sector

Industrial use accounts for 38% of national emissions

As shown in Figure ES-2, the industrial sector accounted for approximately 38% of total U.S. economy emissions (both energy-related and non-energy-related scope 1 and scope 2).[6] Under business as usual (BAU) operations, the U.S. industrial sector's energy consumption and energy-related carbon dioxide (CO_2) emissions are projected to increase by 2050.[7] This report's findings reinforce that fundamental changes to industrial processes and materials are needed to reach the nation's goal[8] of net zero GHG emissions by 2050.

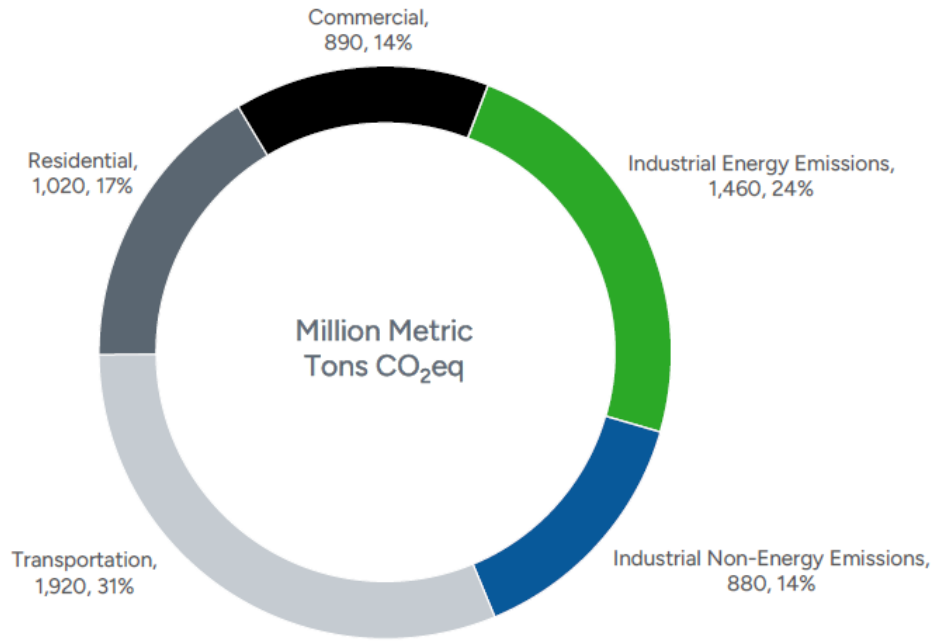


Figure ES-2. Total U.S. GHG emissions in 2018 by economic sector in million metric tons carbon-dioxide equivalent (MMT CO_2e)

2018 is the latest data year available for inclusion of detailed industrial subsectors energy-related and non-energy related emissions. Compiled from multiple sources; see Figure 4 for full details.

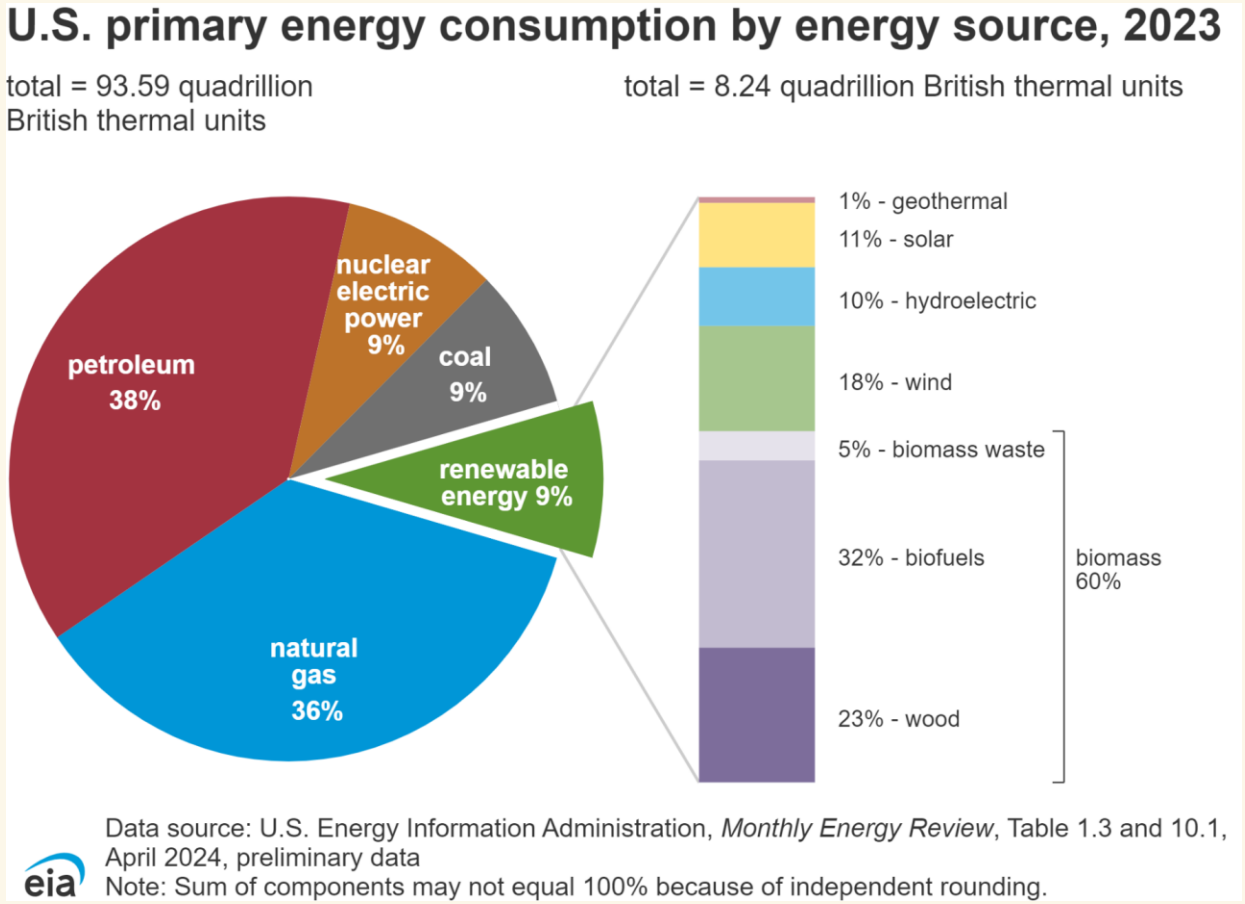
GHG Emissions in the U.S. Chemical Sector

Nine key chemical production processes account for 92 MMT CO_2e emissions.

- Ethylene
- Propylene
- Butadiene
- Benzene-toluene-xylene (BTX) aromatics
- Chlor-alkali
- Soda ash
- Ethanol
- Methanol
- Ammonia

Energy Use in the U.S.

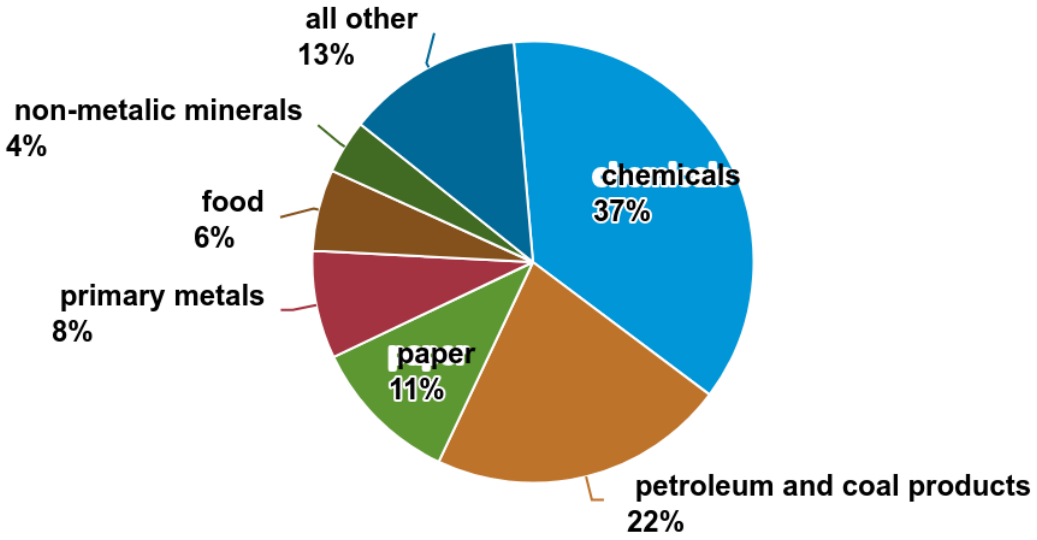
83% from fossil sources that produce carbon emissions



Energy Use by Sector

U.S. manufacturing energy consumption by major types of manufacturers, 2018

total = 19.44 quadrillion British thermal units

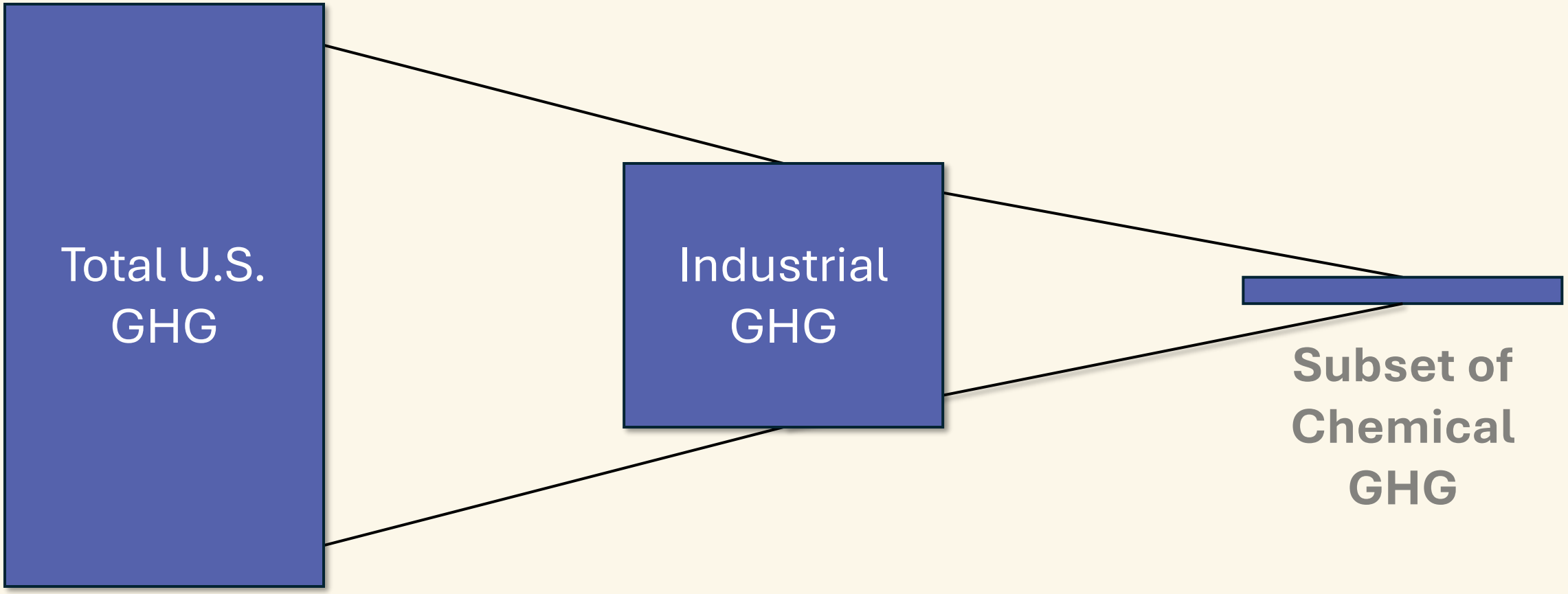


Data source: U.S. Energy Information Administration, *Manufacturing Energy Consumption Survey 2018*, Table 1.2, February 2021

Note: Includes electricity purchases and energy sources used as feedstocks for making products. Sum of shares may not equal 100% because of independent rounding.

Chemicals use 37% of all the energy consumed by the industrial sector

In Short, 9 Chemical Production Processes Account for 1.5% of U.S. GHG Emissions



Decarbonization Pathways

+ Studies conducted by Department of Energy

+ Reviewed multiple scenarios

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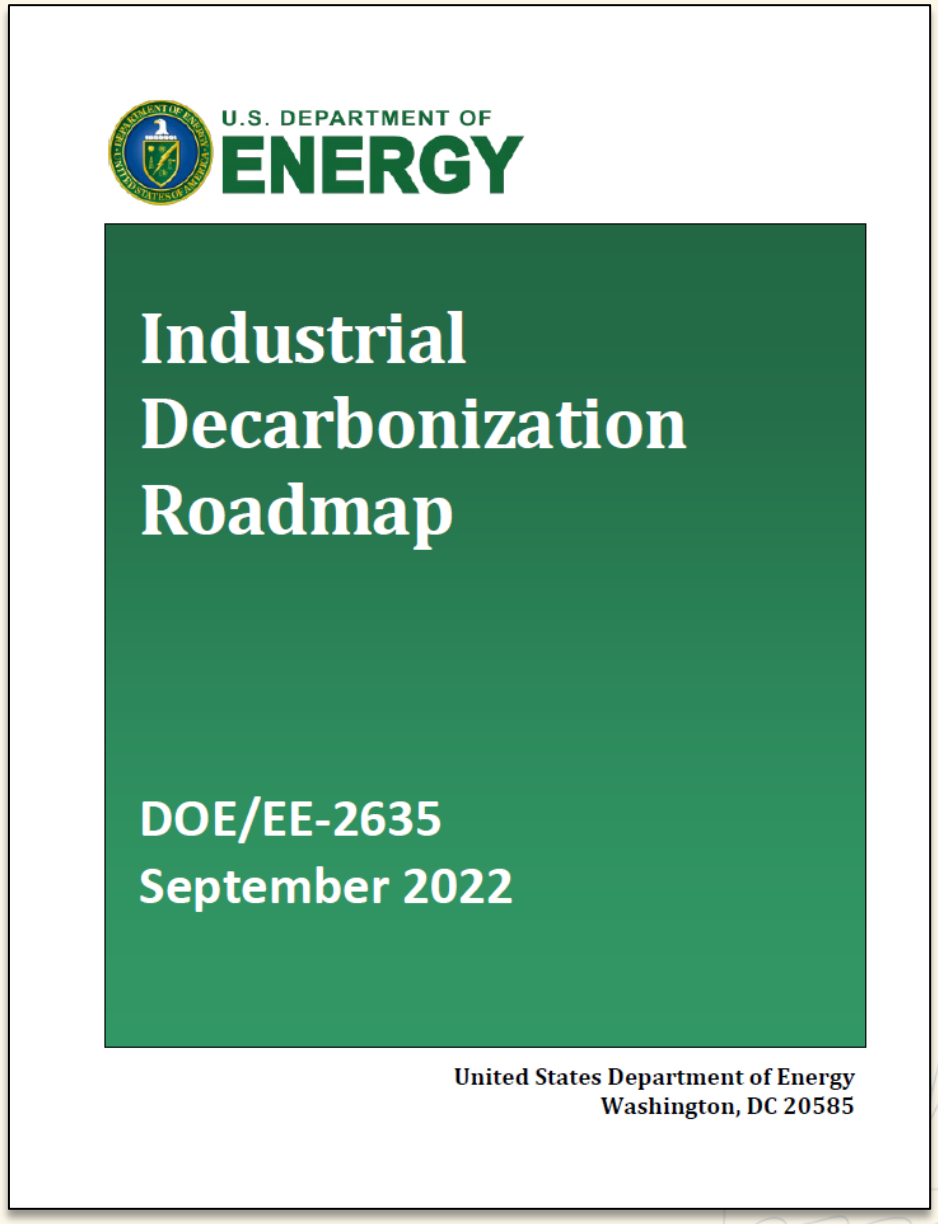
Industrial Roadmap

Main Tools to Decarbonization

- Efficient use of energy
- Low-carbon fuels
- Hydrogen
- Increased use of electrochemical processes
- Industrial electrification
  - Process heat
- Carbon capture and storage

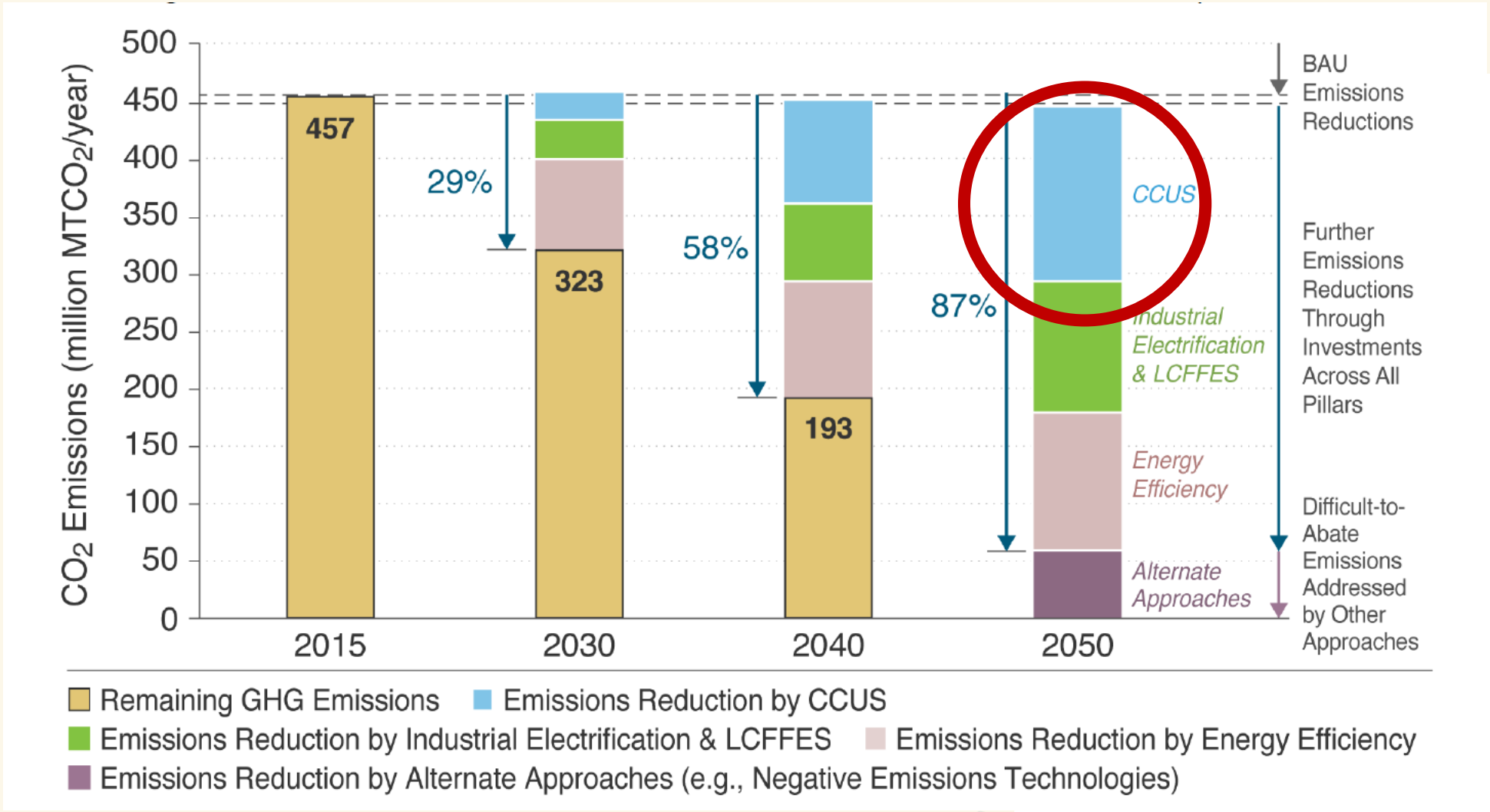
Source: Industrial Decarbonization Roadmap,

U.S. Department of Energy.



Decarbonization Tools

Carbon capture and storage is a significant part of the industrial decarbonization plan



LCFFES = Low-carbon fuels, feedstocks, and energy sources

Carbon Capture and Underground Storage

The Department has explored potential underground storage locations and transport routes

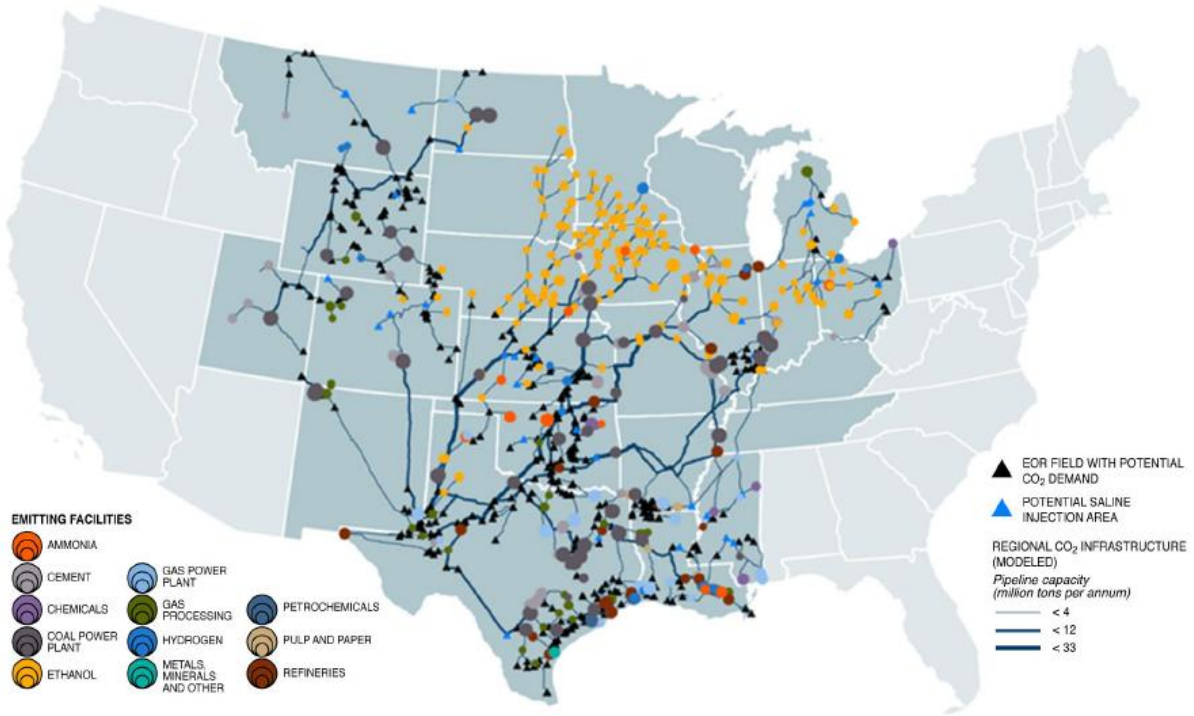


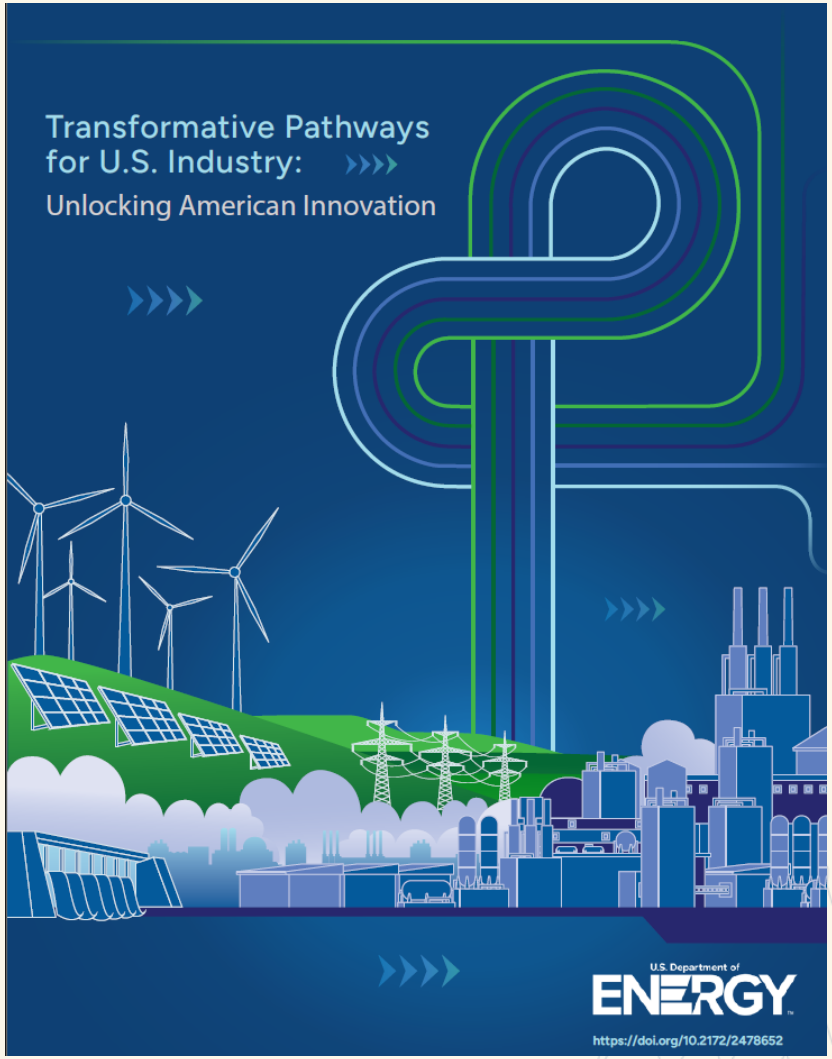
FIGURE 8. EXAMPLE OF OPTIMIZED TRANSPORT NETWORK FOR ECONOMY-WIDE CARBON CAPTURE AND STORAGE.

THE CIRCULAR DOTS SHOW THE TYPES OF CO_2 EMITTING SOURCES, INCLUDING SEVERAL INDUSTRIAL CATEGORIES, AND TRIANGLES SHOWING TWO CLASSES OF STORAGE LOCATIONS. SOURCE: ABRAMSON, MCFARLANE, AND BROWN 2020.[107]

> *Key message: To capture CO_2 emissions from hard-to-abate industrial sources connections will be needed to regional CO_2 pipelines that provide delivery to storage or reuse locations.*

Chlor-Alkali Specific Analysis

- Published January 2025
- Report focused on newer technologies not previously studied



Source: Transformative Pathways for U. S. Industry: Unlocking American Innovation, U.S. Department of Energy

Chlor-Alkali Specific Analysis

> While interventions along the decarbonization pillars provide substantial decarbonization potential, innovative clean chemicals production technologies are needed to reach near zero emissions (represented as [carbon capture and storage] CCS-enabled clean production in the modeling). **Without these innovations, achieving near zero or absolute net zero emissions seems unfeasible for most chemicals, with the exception of ethanol and chlor-alkali.**

Chlor-Alkali Specific Analysis

Technology transition offers the greatest decarbonization gains

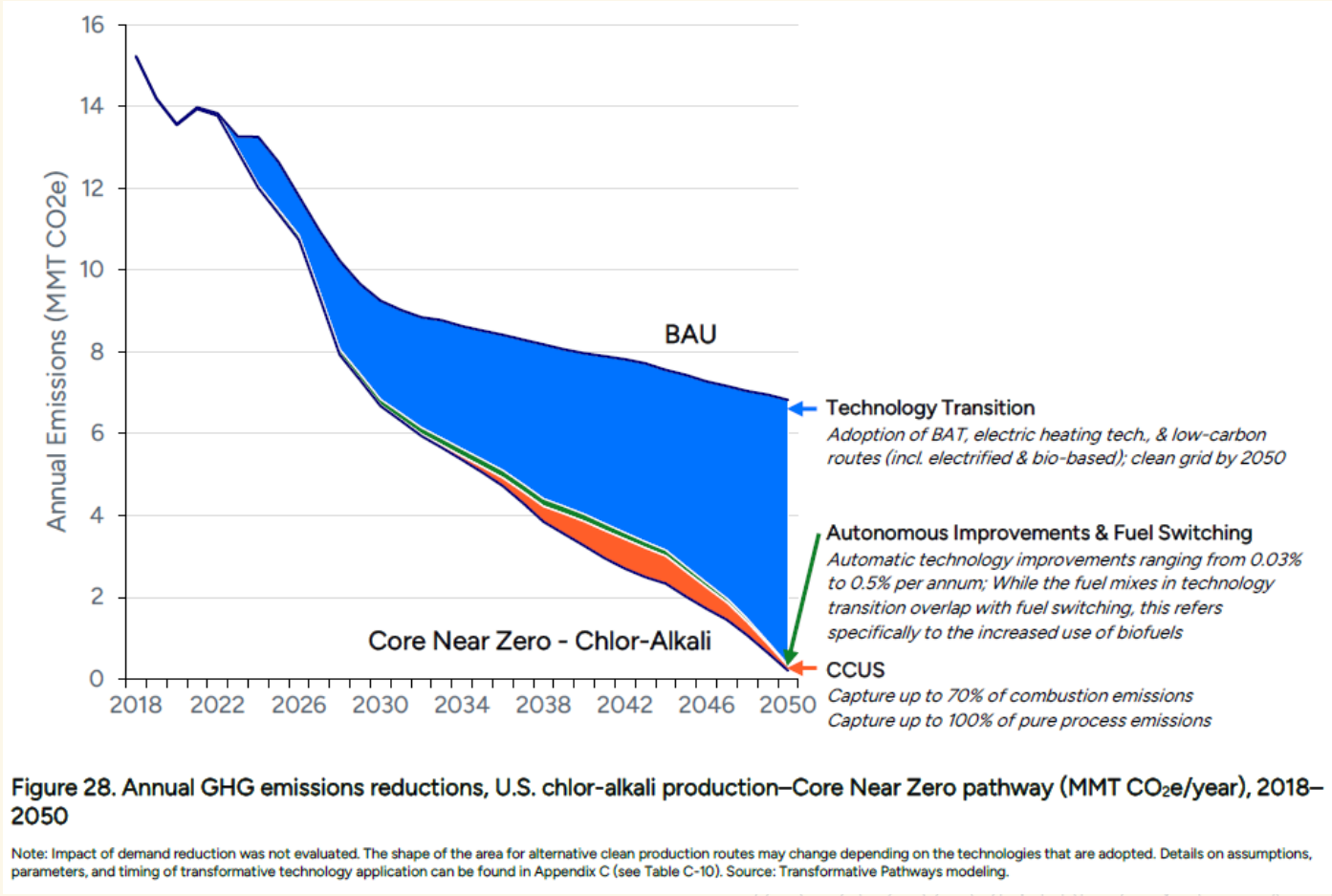


Figure 28. Annual GHG emissions reductions, U.S. chlor-alkali production–Core Near Zero pathway (MMT CO_2e/year), 2018–2050

Note: Impact of demand reduction was not evaluated. The shape of the area for alternative clean production routes may change depending on the technologies that are adopted. Details on assumptions, parameters, and timing of transformative technology application can be found in Appendix C (see Table C-10). Source: Transformative Pathways modeling.

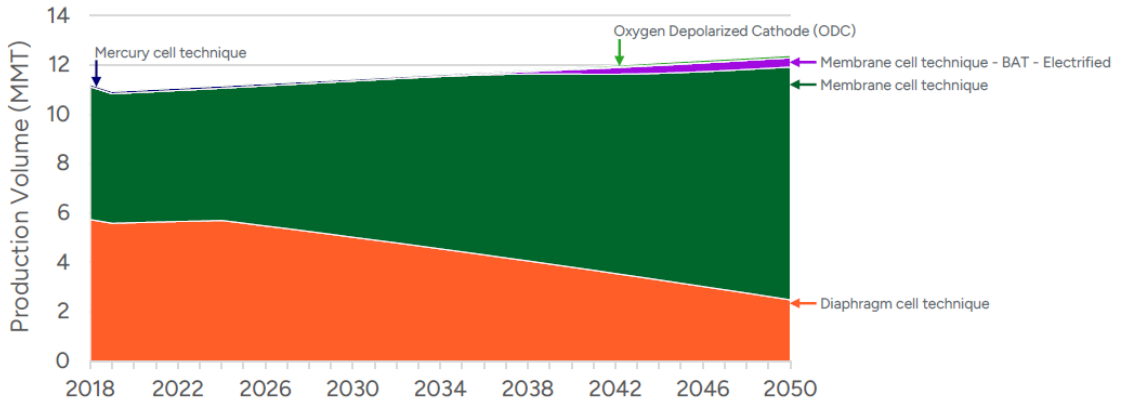
BAU = Business as Usual (Scenario)

Chlor-Alkali Specific Analysis

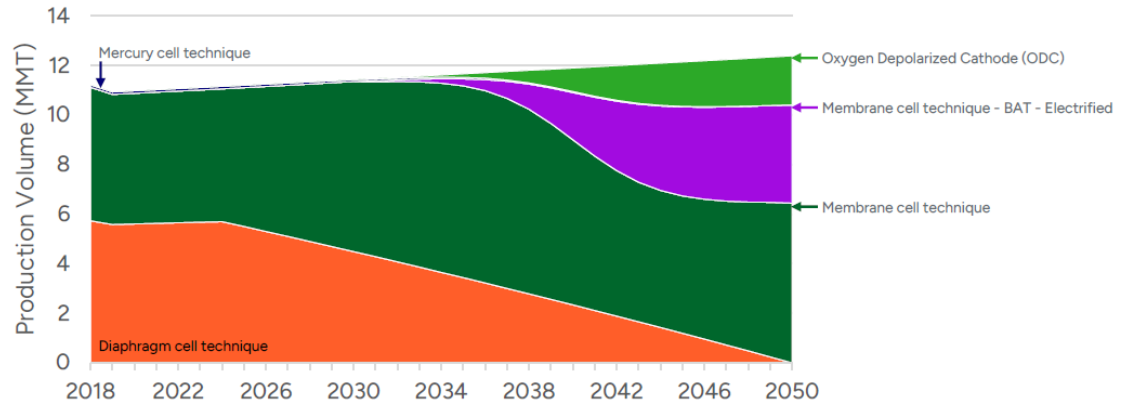
Tool: Energy Efficiency

- Replacement of diaphragm technology
- Bipolar configurations
- High performance materials
  - Coatings
  - Membranes
  - Electrodes
- High purity brine
- Oxygen Depolarized Cathode (ODC)

Business As Usual



Core Near Zero



Chlor-Alkali Specific Analysis

Tool: Electrification

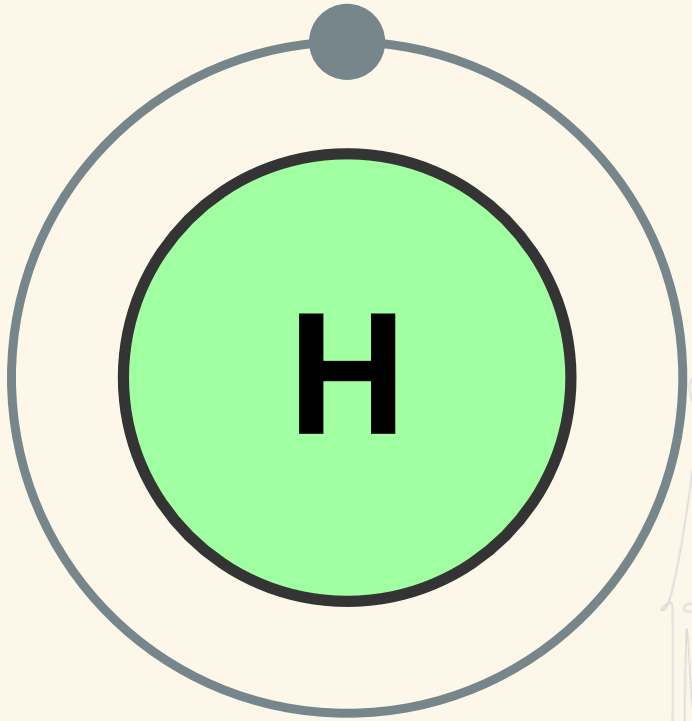
Electrifying steam generation using high-temperature heat pumps or electric boilers

“Even with just 5% electrified steam generation across chlor-alkali plants, electrification emerges as the primary driver of chlor-alkali decarbonization...”

Chlor-Alkali Specific Analysis

Tools: Low-carbon Fuels, Feedstocks, and Energy Sources + Carbon Capture and Storage

- Use all byproduct hydrogen (no venting)
- Negligible carbon capture; focus on grid decarbonization



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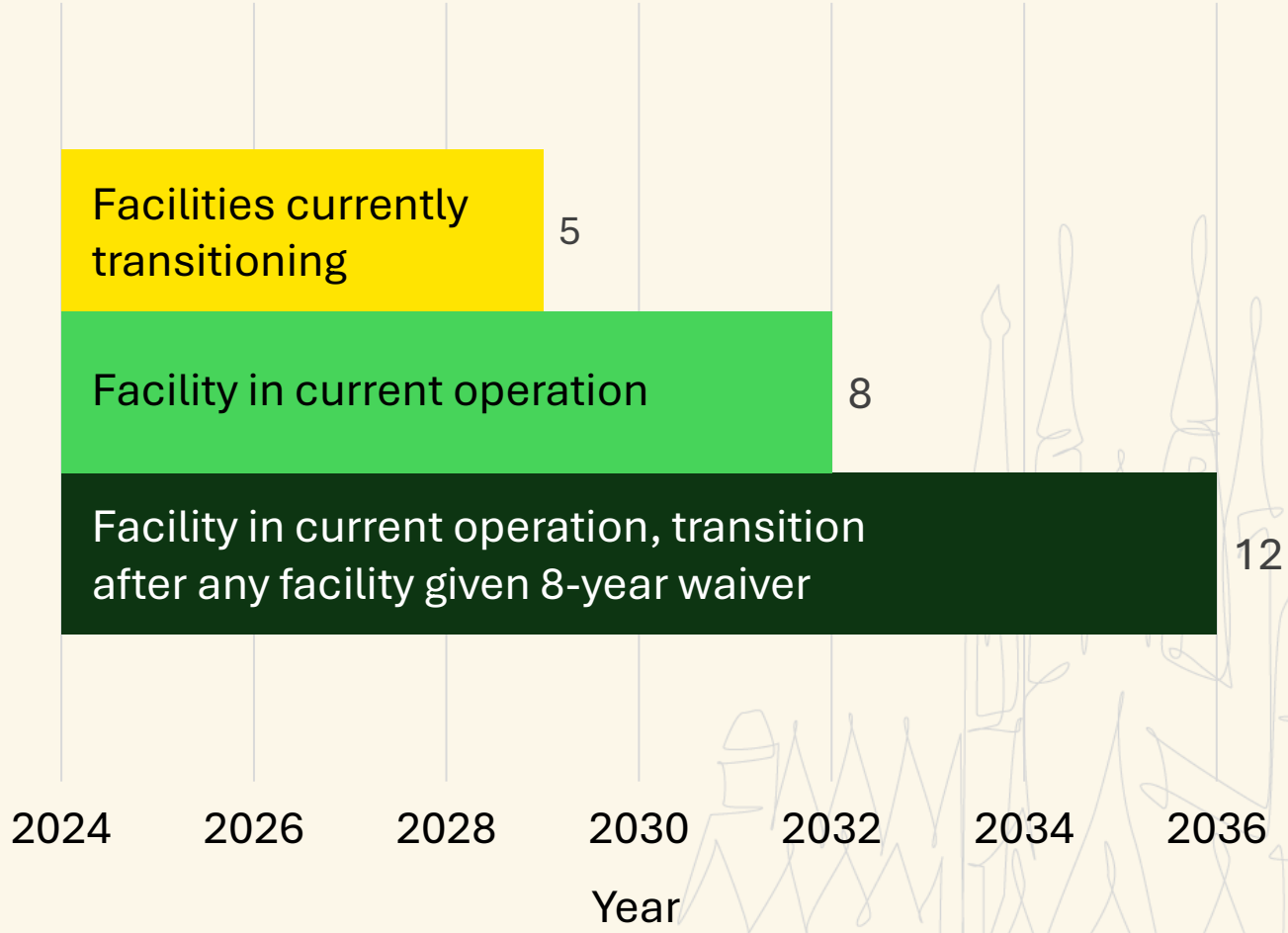
Recent EPA Rule Phases Out Asbestos Use in Diaphragm Method

EPA Rule Requires Staggered facility transition from asbestos diaphragms

- Five years for facilities already in transition
- In succession – eight years and twelve years

Link to EPA's Final Rule



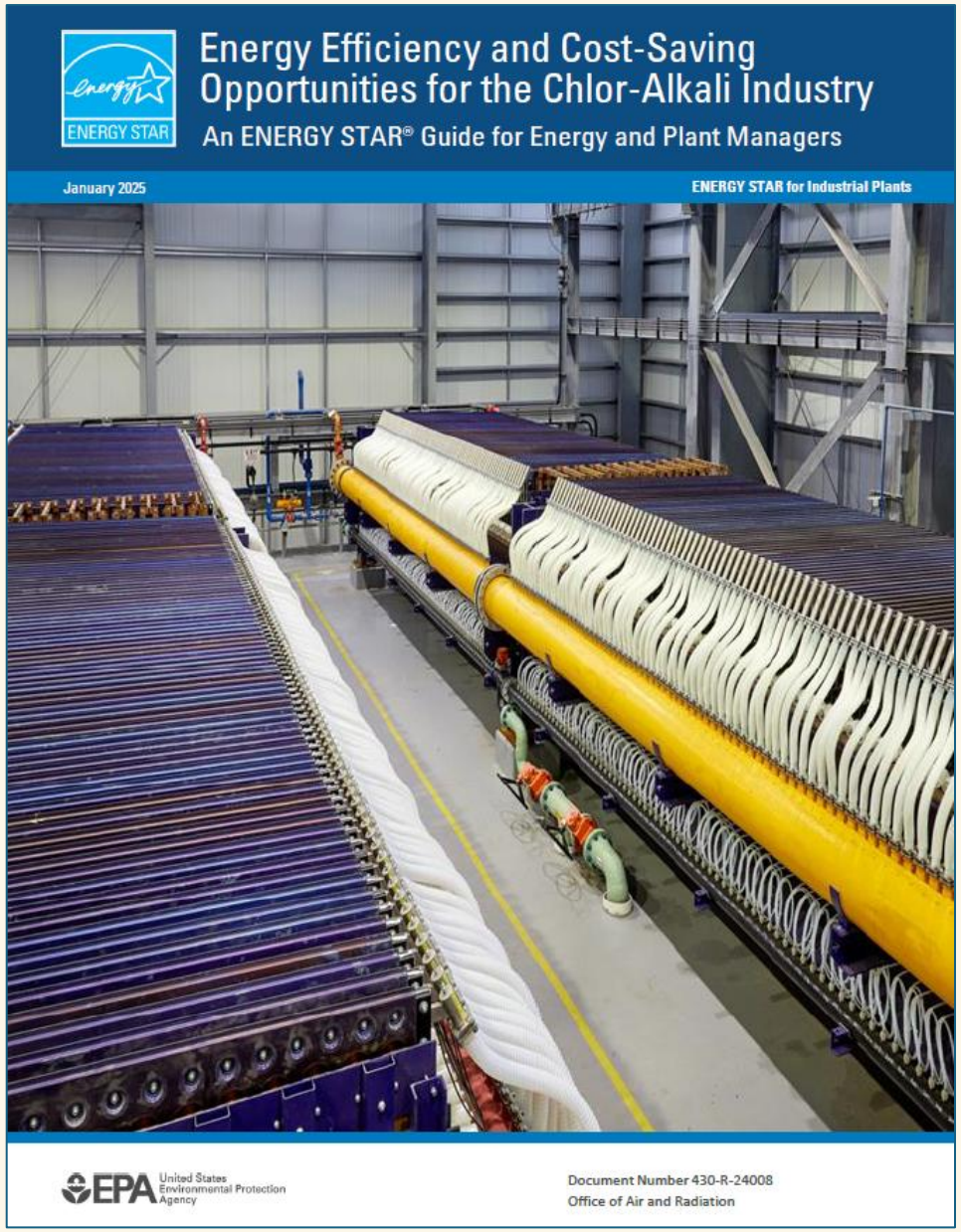
Publicly Announced Closures, Reductions, and Conversions

Date	Company	Location	Change
March 2021	Olin	Macintosh, Alabama	Shutdown 50% of Diaphragm Capacity
May 2021	Olin	Plaquemine, Louisiana	Shutdown 20% of Diaphragm Capacity
August 2021	OxyChem	Niagara, New York	Shutdown diaphragm plant
October 2021	Olin	Macintosh, Alabama	Shutdown remaining diaphragm capacity
August 2022	Olin	Freeport, Texas	Shutdown portion of diaphragm capacity
August 2022	OxyChem	Battleground, Texas	Convert from diaphragm to membrane

The Energy Guide

- Resource for improving energy efficiency in operations
- Benefited from the chlor-alkali industry's input during development
- Available for use!

Energy Efficiency and Cost-Saving Opportunities for the Chlor-Alkali Industry, U.S. Environmental Protection Agency



Activities of Individual Companies

Sampling of individual activities of CI members

Based on public information from websites and sustainability reports

- Metrics reported at the company level (not chlor-alkali-specific)

- Commonly reported metrics:
  - Energy Consumed
  - Greenhouse gas (GHG) emissions
  - Water use

Common objectives:

- Net zero emissions by 2035, 2040 or 2050
- Reduction of scope 1, 2 and/or 3 emissions
- Renewable energy sources

Sustainability Efforts by a Sampling of CI Members

Company	Targets	Metrics	Source
Brenntag	+ 100% renewable electricity by 2025 + 40% absolute carbon reduction by 2030 + Net zero carbon emission	+ Energy use and source + Scope 1, 2, and 3 GHG emissions	Sustainability | Brenntag
Chemtrade	+ Reduce scope 1 GHG emissions by 50% by 2025 + Maintain energy intensity below energy average + Use at least 85% electricity from hydropower	+ GHG emissions + Energy usage + Hazardous waste generated	Sustainability - Chemtrade Logistics Inc.
Covestro	+ Net zero GHG from production (scope 1 and 2) by 2035 + Net zero GHG emission in value chain (scope 1, 2, and 3) by 2050	+ Total scope 1, 2, 3 emissions + Energy usage, intensity, and source	Sustainability at Covestro - Covestro Annual Report 2023
DeNora	+ 50% Scope 1 and 2 reduction by 2030 + 100% renewable electricity by 2030 + 5% recycled noble metals in products by 2030	+ Percentage of progress toward goals	Sustainability | De Nora
Dow	+ Reduce GHG emissions by 15% by 2030 + Carbon neutrality by 2050 + Water stewardship at all sites by 2035	+ GHG emissions + Energy intensity + Water intensity	Sustainability Commitments and Targets | Dow Corporate
Hawkins	Not found in initial search; Sustainability report noted "continuous evaluation and improvement."	+ Total energy consumed + Water consumed	Environmental, Social and Governance - Hawkins (hawkinsinc.com)
Harcros	Not found in initial search	Ecovadis member, rated top quartile	Sustainability | Harcros Chemicals
Olin	+ Reduce scope 1 and 2 GHG emissions by 25% by 2030	+ Energy usage + Water usage + Reduction progress	2022 ESG Factsheet
OxyChem	+ Net zero operations (scope 1 and 2) by 2040 + Net zero sold products (scope 1, 2, and 3) by 2050	+ Energy use and GHG emission by the division level	Sustainability (oxy.com)
PVS	Not found in initial search	+ Repurposed waste stream + GHG avoided	Sustainability Practices at PVS Chemicals | Keeping Our Planet Clean
SABIC	+ Reduce Scoop 1 & 2 emissions by 20% by 2030 + Fully decarbonize operations by 2050	+ Absolute and per ton GHG emissions + Energy and waste intensity	SABIC - Climate, Energy & Resource Efficiency
Westlake	+ Reduce Scope 1 and Scope 2 GHG by 20% per ton of production by 2030 + Implement water management at water stressed sites by 2030	+ Caustic footprint + Tons of hazardous waste + Water discharged and consumed	Westlake's European Subsidiary, Vinnolit, to offer caustic soda with reduced CO2 footprint | Westlake 2023 Sustainability Report

THANK YOU

Robyn Brooks

Vice President, Fixed Facility Health, Environment, Safety, Security & Regulatory Affairs

Robyn.Brooks@CL2.com

Cefic sector group

The European Chemical Industry Council, AISBL – Rue Belliard, 40 - 1040 Brussels – Belgium
Transparency Register n°64879142323-90

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Chlor-alkali: achieving climate neutrality

Extra Slides – Closure Announcements

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12th International Chlor-Alkali Technology Conference & Exhibition

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Barcelona - Spain

March 16, 2021

Olin Announces Chlor Alkali Capacity Reduction

NEWS PROVIDED BY
Olin Corporation →
16 Mar, 2021, 08:45 ET

CLAYTON, Mo., March 16, 2021 /PRNewswire/ -- Olin Corporation (NYSE: OLN) announced today that it plans to permanently shut down approximately 50% of its diaphragm-grade chlor alkali capacity (approximately 200,000 tons) at its McIntosh, Alabama facility. The closure is expected to be completed by March 31, 2021. This action is expected to be cash flow accretive. Olin's first quarter 2021 results are forecast to include approximately $5 million of restructuring charges associated with this plan.

"This is yet another step in Olin's efforts to right-size our asset base and achieve reinvestment economics across our complete Electrochemical Unit portfolio," remarked Scott Sutton, Olin President and Chief Executive Officer. "Shareholders can expect Olin to continue to take high-capital, non-accretive assets off our balance sheet as existing contractual supply obligations end, focusing our Olin teammates and resources toward unleashing Olin's true value potential."

COMPANY DESCRIPTION

Olin Corporation is a leading vertically-integrated global manufacturer and distributor of chemical products and a leading U.S. manufacturer of ammunition. The chemical products produced include chlorine and caustic soda, vinyls, epoxies, chlorinated organics, bleach, and hydrochloric acid. Winchester's principal manufacturing facilities produce and distribute sporting ammunition, law enforcement ammunition, reloading components, small caliber military ammunition and components, and industrial cartridges.

Visit www.olin.com for more information on Olin.

FORWARD-LOOKING STATEMENTS

This communication includes forward-looking statements. These statements relate to analyses and other information that are based on management's beliefs, certain assumptions made by management, forecasts of future results, and current expectations, estimates and projections about the markets and economy in which we and our various segments operate. The statements contained in this communication that are not statements of historical fact may include forward-looking statements that involve a number of risks and uncertainties.

We have used the words "anticipate," "intend," "may," "expect," "believe," "should," "plan," "outlook," "project," "estimate," "forecast," "optimistic," and variations of such words and similar expressions in this communication to identify such forward-looking statements. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions, which are difficult to predict and many of which are beyond our control. Therefore, actual outcomes and results may differ materially from those matters expressed or implied in such forward-looking statements. We undertake no obligation to update publicly any forward-looking statements, whether as a result of future events, new information or otherwise. The payment of cash dividends is subject to the discretion of our board of directors and will be determined in light of then-current conditions, including our earnings, our operations, our financial conditions, our capital requirements and other factors deemed relevant by our board of directors. In the future, our board of directors may change our dividend policy, including the frequency or amount of any dividend, in light of then-existing conditions.

The risks, uncertainties and assumptions involved in our forward-looking statements, many of which are discussed in more detail in our filings with the SEC, including without limitation the "Risk Factors" section of our Annual Report on Form 10-K for the year ended December 31, 2020, include, but are not limited to, the following:

Business, Industry and Operational Risks

- sensitivity to economic, business and market conditions in the United States and overseas, including economic instability or a downturn in the sectors served by us;
- declines in average selling prices in the chlor alkali industry and the supply/demand balance for our products, including the impact of excess industry capacity or an imbalance in demand for our chlor alkali products;
- unsuccessful implementation of our operating model, which prioritizes Electrochemical Unit (ECU) margins over sales volumes;
- our reliance on a limited number of suppliers for specified feedstock and services and our reliance on third-party transportation;
- failure to control costs or to achieve targeted cost reductions;
- higher-than-expected raw material, energy, transportation, and/or logistics costs;
- the occurrence of unexpected manufacturing interruptions and outages, including those occurring as a result of labor disruptions and production hazards;
- the failure or an interruption of our information technology systems;
- our substantial amount of indebtedness and significant debt service obligations;
- the negative impact from the COVID-19 pandemic and the global response to the pandemic;
- weak industry conditions affecting our ability to comply with the financial maintenance covenants in our senior secured credit facility;
- the loss of a substantial customer for either chlorine or caustic soda could cause an imbalance in customer demand for these products;
- failure to attract, retain and motivate key employees;
- risks associated with our international sales and operations, including economic, political or regulatory changes;
- the effects of any declines in global equity markets on asset values and any declines in interest rates or other significant assumptions used to value the liabilities in our pension plan;
- adverse conditions in the credit and capital markets, limiting or preventing our ability to borrow or raise capital;
- our long-range plan assumptions not being realized causing a non-cash impairment charge of long-lived assets;

Legal, Environmental and Regulatory Risks

- new regulations or public policy changes regarding the transportation of hazardous chemicals and the security of chemical manufacturing facilities;
- changes in, or failure to comply with, legislation or government regulations or policies, including changes within the international markets in which we operate;
- unexpected litigation outcomes;
- costs and other expenditures in excess of those projected for environmental investigation and remediation or other legal proceedings; and
- various risks associated with our Lake City U.S. Army Ammunition Plant contract, including performance and compliance with governmental contract provisions.

All of our forward-looking statements should be considered in light of these factors. In addition, other risks and uncertainties not presently known to us or that we consider immaterial could affect the accuracy of our forward-looking statements.

2021-08

SOURCE Olin Corporation

Related Links
http://www.olin.com

May 18, 2021

Olin Announces Further Chlor Alkali Capacity Reduction

NEWS PROVIDED BY
Olin Corporation →
May 18, 2021, 08:45 ET

CLAYTON, Mo., May 18, 2021 /PRNewswire/ -- Olin Corporation (NYSE: OLN) announced today that it plans to permanently shut down approximately 20% of its diaphragm-grade chlor alkali capacity (approximately 225,000 ECU tons) at its Plaquemine, LA facility. The closure is expected to be completed by June 1, 2021 and is expected to be cash flow accretive.

"This is the next step on our path to exit high-capital, low-return diaphragm ECUs and redirect Olin's cash generation model toward our transformative Parlaying and Structuring phases," remarked Scott Sutton, Olin Chairman, President, and Chief Executive Officer. "Earlier this year we shut down 200,000 diaphragm ECU tons at our McIntosh, AL facility, and the previously announced shut down of 230,000 diaphragm ECU tons at our Freeport, TX facility will occur in the second quarter of 2021, as well."

COMPANY DESCRIPTION

Olin Corporation is a leading vertically-integrated global manufacturer and distributor of chemical products and a leading U.S. manufacturer of ammunition. The chemical products produced include chlorine and caustic soda, vinyls, epoxies, chlorinated organics, bleach, and hydrochloric acid. Winchester's principal manufacturing facilities produce and distribute sporting ammunition, law enforcement ammunition, reloading components, small caliber military ammunition and components, and industrial cartridges.

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2021-14

SOURCE Olin Corporation

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October 21, 2021

Olin To Shut Down Additional Chlor Alkali Capacity

NEWS PROVIDED BY
Olin Corporation →
21 Oct, 2021, 08:40 ET

CLAYTON, Mo., Oct. 21, 2021 /PRNewswire/ -- Olin Corporation (NYSE: OLN) announced today that it plans to permanently shut down the remaining diaphragm-grade chlor alkali capacity (approximately 200,000 Electrochemical Unit "ECU" tons) at its McIntosh, Alabama facility. The closure is expected to be completed by the end of third quarter 2022 and is in addition to the 200,000 ECU tons shut down at McIntosh in first quarter 2021.

"When this shut down is complete, Olin will have rationalized approximately 855,000 ECU tons of high-cost, low-value diaphragm-grade chlor alkali capacity since early 2021," remarked Scott Sutton, Olin Chairman, President, and Chief Executive Officer. "This action reinforces our commitment to lift our ECU values to a more sustainable level."

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We have used the words "anticipate," "intend," "may," "expect," "believe," "should," "plan," "outlook," "project," "estimate," "forecast," "optimistic," and variations of such words and similar expressions in this communication to identify such forward-looking statements. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions, which are difficult to predict and many of which are beyond our control. Therefore, actual outcomes and results may differ materially from those matters expressed or implied in such forward-looking statements. We undertake no obligation to update publicly any forward-looking statements, whether as a result of future events, new information or otherwise. The payment of cash dividends is subject to the discretion of our board of directors and will be determined in light of then-current conditions, including our earnings, our operations, our financial conditions, our capital requirements and other factors deemed relevant by our board of directors. In the future, our board of directors may change our dividend policy, including the frequency or amount of any dividend, in light of then-existing conditions.

The risks, uncertainties and assumptions involved in our forward-looking statements, many of which are discussed in more detail in our filings with the SEC, including without limitation the "Risk Factors" sections of our Annual Report on Form 10-K for the year ended December 31, 2020 and our Quarterly Reports on Form 10-Q and other reports furnished or filed with the SEC, include, but are not limited to, the following:

Business, Industry and Operational Risks

- sensitivity to economic, business and market conditions in the United States and overseas, including economic instability or a downturn in the sectors served by us;
- declines in average selling prices in the chlor alkali industry and the supply/demand balance for our products, including the impact of excess industry capacity or an imbalance in demand for our chlor alkali products;
- unsuccessful implementation of our operating model, which prioritizes Electrochemical Unit (ECU) margins over sales volumes;
- our reliance on a limited number of suppliers for specified feedstock and services and our reliance on third-party transportation;
- failure to control costs or to achieve targeted cost reductions;
- higher-than-expected raw material, energy, transportation, and/or logistics costs;
- the occurrence of unexpected manufacturing interruptions and outages, including those occurring as a result of labor disruptions and production hazards;
- the failure or an interruption of our information technology systems;
- our substantial amount of indebtedness and significant debt service obligations;
- the negative impact from the COVID-19 pandemic and the global response to the pandemic, including without limitation adverse impacts in complying with governmental COVID-19 vaccine mandates;
- weak industry conditions affecting our ability to comply with the financial maintenance covenants in our senior secured credit facility;
- the loss of a substantial customer for either chlorine or caustic soda could cause an imbalance in customer demand for these products;
- failure to attract, retain and motivate key employees;
- risks associated with our international sales and operations, including economic, political or regulatory changes;
- the effects of any declines in global equity markets on asset values and any declines in interest rates or other significant assumptions used to value the liabilities in our pension plan;
- adverse conditions in the credit and capital markets, limiting or preventing our ability to borrow or raise capital;
- our long-range plan assumptions not being realized causing a non-cash impairment charge of long-lived assets;

Legal, Environmental and Regulatory Risks

- new regulations or public policy changes regarding the transportation of hazardous chemicals and the security of chemical manufacturing facilities;
- changes in, or failure to comply with, legislation or government regulations or policies, including changes within the international markets in which we operate;
- unexpected litigation outcomes;
- costs and other expenditures in excess of those projected for environmental investigation and remediation or other legal proceedings; and
- various risks associated with our Lake City U.S. Army Ammunition Plant contract, including performance and compliance with governmental contract provisions.

All of our forward-looking statements should be considered in light of these factors. In addition, other risks and uncertainties not presently known to us or that we consider immaterial could affect the accuracy of our forward-looking statements.

2021-22

SOURCE Olin Corporation

Related Links
http://www.olin.com

August 3, 2022

08.03.22

Second Quarter Earnings Conference Call

OXY ZERO IN™

HIGHLIGHTS

OXYCHEM BATTLEGROUND MEMBRANE CONVERSION

- Modernization and expansion of the Battleground plant expected to increase cash flow through improved margins and higher product volumes, while enhancing operational flexibility:
  - Conversion from diaphragm to membrane technology expected to improve margins, while lowering maintenance capital and GHG emissions intensity
  - Expand chlor-alkali capacity to cover strategic commercial and supply chain initiatives
  - Improve plant logistics to create additional operating flexibility
- Battleground project expected to generate a strong return while improving OxyChem's market position
- Construction expected to commence in 2023, with completion expected in early 2026:
  - Existing operations to continue as normal during construction

Membrane Electrolyzer

Project Spending 2023 – 2025:	~$1.1 B (~20% in 2023)
Incremental Annual EBITDA:	$250 – $350 MM
Incremental Plant Capacity:	~80%

August 24, 2022

OLIN ANNOUNCES CHLOR ALKALI CAPACITY REDUCTION

NEWS PROVIDED BY
Olin Corporation →
24 Aug, 2022, 16:05 ET

CLAYTON, Mo., Aug. 24, 2022 /PRNewswire/ -- Olin Corporation (NYSE: OLN) announced today that it plans to permanently shut down approximately 225,000 ECU tons of diaphragm-grade chlor alkali capacity at its Freeport, TX facility. The closure is expected to be completed by year end 2022.

"Including this closure, Olin will have rationalized over one million ECU tons of diaphragm-grade chlor alkali capacity in less than two years," remarked Scott Sutton, Olin Chairman, President, and Chief Executive Officer. "These actions demonstrate our commitment to lift and maintain our ECU values, while developing a more sustainable asset configuration."

COMPANY DESCRIPTION

Olin Corporation is a leading vertically-integrated global manufacturer and distributor of chemical products and a leading U.S. manufacturer of ammunition. The chemical products produced include chlorine and caustic soda, vinyls, epoxies, chlorinated organics, bleach, hydrogen, and hydrochloric acid. Winchester's principal manufacturing facilities produce and distribute sporting ammunition, law enforcement ammunition, reloading components, small caliber military ammunition and components, and industrial cartridges.

Visit www.olin.com for more information on Olin.

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We have used the words "anticipate," "intend," "may," "expect," "believe," "should," "plan," "outlook," "project," "estimate," "forecast," "optimistic," "target," and variations of such words and similar expressions in this communication to identify such forward-looking statements. These forward-looking statements include, but are not limited to, statements regarding the Company's intent to repurchase, from time to time, the Company's common stock. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions, which are difficult to predict and many of which are beyond our control. Therefore, actual outcomes and results may differ materially from those matters expressed or implied in such forward-looking statements. We undertake no obligation to update publicly any forward-looking statements, whether as a result of future events, new information or otherwise. The payment of cash dividends is subject to the discretion of our board of directors and will be determined in light of then-current conditions, including our earnings, our operations, our financial conditions, our capital requirements and other factors deemed relevant by our board of directors. In the future, our board of directors may change our dividend policy, including the frequency or amount of any dividend, in light of then-existing conditions.

The risks, uncertainties and assumptions involved in our forward-looking statements, many of which are discussed in more detail in our filings with the SEC, including without limitation the "Risk Factors" section of our Annual Report on Form 10-K for the year ended December 31, 2021, and our Quarterly Reports on Form 10-Q and other reports furnished or filed with the SEC, include, but are not limited to, the following:

Business, Industry and Operational Risks

- sensitivity to economic, business and market conditions in the United States and overseas, including economic instability or a downturn in the sectors served by us;
- declines in average selling prices for our products and the supply/demand balance for our products, including the impact of excess industry capacity or an imbalance in demand for our chlor alkali products;
- unsuccessful execution of our strategic operating model, which prioritizes Electrochemical Unit (ECU) margins over sales volumes;
- failure to control costs and inflation impacts or failure to achieve targeted cost reductions;
- our reliance on a limited number of suppliers for specified feedstock and services and our reliance on third-party transportation;
- higher-than-expected raw material, energy, transportation, and/or logistics costs;
- the occurrence of unexpected manufacturing interruptions and outages, including those occurring as a result of labor disruptions, production hazards and weather-related events;
- the failure or an interruption of our information technology systems;
- failure to identify, attract, develop, retain and motivate qualified employees throughout the organization;
- our inability to complete future acquisitions or successfully integrate them into our business;
- our substantial amount of indebtedness and significant debt service obligations;
- risks associated with our international sales and operations, including economic, political or regulatory changes;
- the negative impact from the COVID-19 pandemic and the global response to the pandemic, including without limitation adverse impacts in complying with governmental mandates;
- weak industry conditions affecting our ability to comply with the financial maintenance covenants in our senior credit facility;
- adverse conditions in the credit and capital markets, limiting or preventing our ability to borrow or raise capital;
- the effects of any declines in global equity markets on asset values and any declines in interest rates or other significant assumptions used to value the liabilities in, and funding of, our pension plans;
- our long-range plan assumptions not being realized causing a non-cash impairment charge of long-lived assets;

Legal, Environmental and Regulatory Risks

- changes in, or failure to comply with, legislation or government regulations or policies, including changes regarding our ability to manufacture or use certain products and changes within the international markets in which we operate;
- new regulations or public policy changes regarding the transportation of hazardous chemicals and the security of chemical manufacturing facilities;
- unexpected outcomes from legal or regulatory claims and proceedings;
- costs and other expenditures in excess of those projected for environmental investigation and remediation or other legal proceedings;
- various risks associated with our Lake City U.S. Army Ammunition Plant contract and performance under other governmental contracts; and
- failure to effectively manage environmental, social and governance (ESG) issues and related regulations, including climate change and sustainability.

All of our forward-looking statements should be considered in light of these factors. In addition, other risks and uncertainties not presently known to us or that we consider immaterial could affect the accuracy of our forward-looking statements.

2022-15

SOURCE Olin Corporation