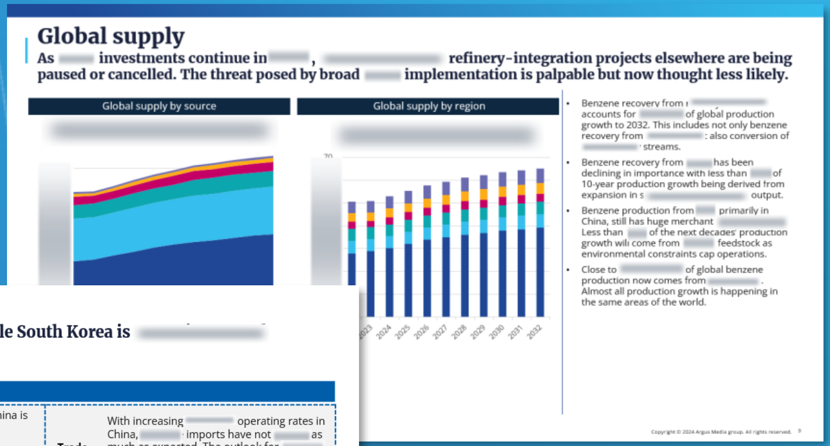
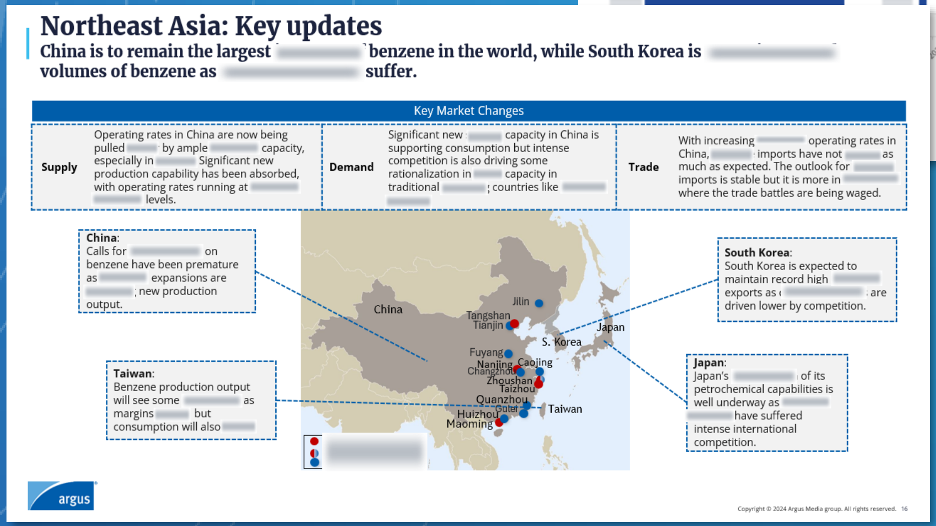
Argus report sample

Benzene Analytics

July 2024





About this report

Argus Benzene Analytics is a data-driven evaluation of supply-demand fundamentals forecasts for butadiene markets, published twice a year.

The service includes a 10-year forecast and five-year history covering balances and capacities, organized by country and region.

In this sample, we share insights from North America and Northeast Asia.

Subscribers receive a PowerPoint PDF written by our experts plus the accompanying Excel data files.

To find out more, click here to get in touch.

Key features

10-year forecast and a five-year history
Covering capacities, supply and demand, trade, and feedstock forecasts for leading derivatives, by country and region, published twice a year.

Detailed report
In an easy-to-read PowerPoint format focusing on new plant capacities, growth rates in relevant markets, and regulatory developments.

Regional insight
Covering capacities and operating rates based on global trade and economics.

Downloadable datasets
With data on supply, demand, capacities, operating rates and trade balances, by country and region.

Access to specialists
Speak to the experts behind Argus' long-term analytics forecast services.

Associated Data

Global and Region Capacity, Production, and Company Specific Data

Subscription includes detailed Excel downloads

Argus direct

Benzene Analytics Company Balance, 2023

				Capacity to produce benzene						Capacity to consume benzene							
Region	Country	Company	Location	Coal	Disp.	HDA	MSTDP & MTPX	PyGas	Reformer	ALBZ	Aniline/NB	Cyclo	CLBZ & Other	Cumene / Phenol	EB/SM	Maleic Anhy.	Net
North America	Canada	CEPSA	Becancour							51							-51
North America	Canada	Imperial Oil	Sarni														
North America	Canada	INEOS Styrolution	Sarni														
North America	Canada	Nova Chemicals	Sarni														
North America	Canada	ParaChem															
North America	Canada	Shell Chemicals															
North America	Canada	Shell Chemicals															
North America	Canada	Suncor															
North America	Canada	Suncor															
North America	Mexico	Clorobencenos															
North America	Mexico	Pemex															
North America	US	Americas Styrenics															
North America	US	Ascend Performance Materials															
North America	US	BASF															
North America	US	Chevron Phillips Chemical															
North America	US	Chevron Phillips Chemical															
North America	US	Chevron Phillips Chemical															
North America	US	Citgo															
North America	US	Citgo															
North America	US	Citgo															
North America	US	Cos-Mar															
North America	US	Covestro															
North America	US	Delek Refining															

World benzene supply and demand balance, '000t

	Historical					Estimate		Outlook								
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2018-2027
Capacity																
Coal																
HDA																
MSTDP & MTPX																
PyGas																
Reformer																
TDP																
Total capacity																
Production																
Coal																
HDA																
MSTDP & MTPX																
PyGas																
Reformer																
TDP																
Total production																
Operating Rate																
Total supply																
Derivative Capacity (Benzene)																

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[redacted] margins will continue to [redacted] operating rates and prompt more [redacted] in traditional aromatics recovery complexes.

- This is a light refresh of the *Benzene Analytics* that was previously published in January 2024. It incorporates any known changes to capacities, production, planned projects, as well as updated GDP figures used to model derivative end-use demand. As more accurate production and trade data for 2023 has become available, a complete update to the balances is now being undertaken and will be published later in 2024.
- Most of the benzene produced in 2023 was rec[redacted]erived from [redacted]
- [redacted] represent not only the majority source of current benzene supply but will also be the overwhelming source of [redacted] over the next decade. This is primarily driven by the need to expand [redacted] supply to meet future demand for [redacted] rather than a need to make [redacted]
- Benzene supply growth will therefore continue to be led by its [redacted] and as a co-product of [redacted] and [redacted] These streams can be converted using various conversion technologies, but more and more production growth is coming from [redacted] which are configured to maximize [redacted] barrel of crude oil feed.
- With [redacted] being the driver of modern aromatics complexes, [redacted] capability comes second, and as a result, [redacted] supply growth from conversion tends to lag [redacted] Average [redacted] yields from [redacted] are expected to continue to fall as the boundaries of scale and [redacted] are pushed farther and farther. These [redacted] also include most of the slated [redacted] It is unlikely that the capabilities of the [redacted] and [redacted] units will be expanded.
- On-purpose [redacted] production, mostly from [redacted] continues its decline. As capacity falls by the wayside, so the rate of decline is inevitably slowing.

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Global capacities update

[redacted] capacity closures occurred in [redacted] in 2022-23, as [redacted] exports struggled in a very competitive marketplace. This trend will continue as more [redacted] plants come online in [redacted]

Key project updates

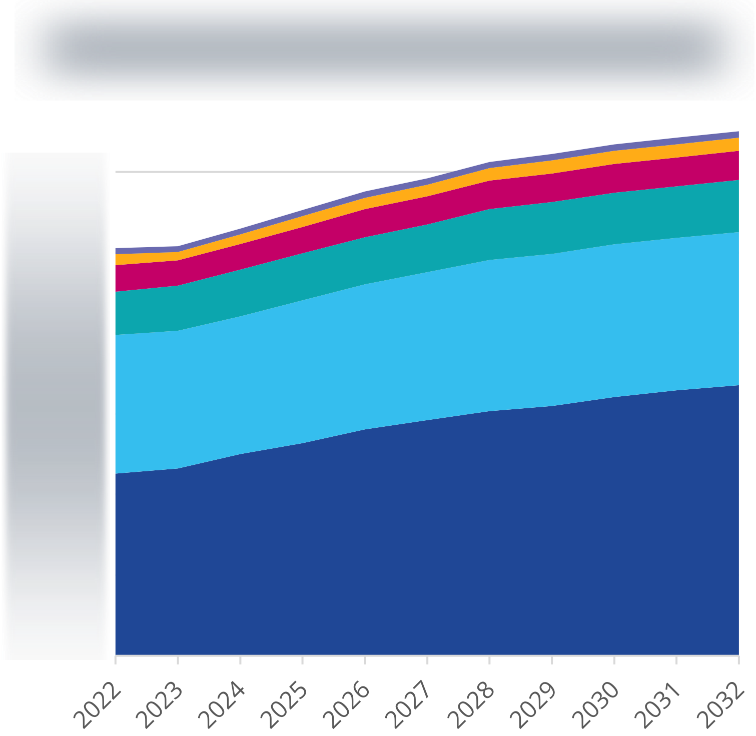
Country	Operating Company	Update
India	[redacted]	Around [redacted] of benzene capacity is slated to be added at the [redacted] sites between 2027 and 2030, together with [redacted] by [redacted] during 2025.
China	[redacted]	Rapid and material expansion of [redacted] capacity in China continues, with 2024 adding another [redacted] of net annual production capability. Further expansions are slated through [redacted] with little announced [redacted], as of yet, resulting from the planned focus on reducing [redacted] from older, less efficient plants.
Korea	[redacted]	The closure in 2024 of [redacted] builds on the decision a couple of years ago to rationalize [redacted] capability at [redacted]. Korea is now a net importer of [redacted].
Canada	[redacted]	[redacted] has announced the planned closure of the [redacted] operation by mid-2026.
Japan	[redacted]	The closure of [redacted] has been announced to take place by the end of fiscal 2026.

- From a capacity perspective, the closure of the [redacted] is now complete.
- A slowing investment rate in [redacted] capacity (due to recent overbuilding) has caused a corresponding slowdown in [redacted] capacity expansion and production growth.
- *Argus* maintains a practice of removing specific units from the aromatics production fleet due to a prolonged dormancy and/or a lack of viable feedstock.

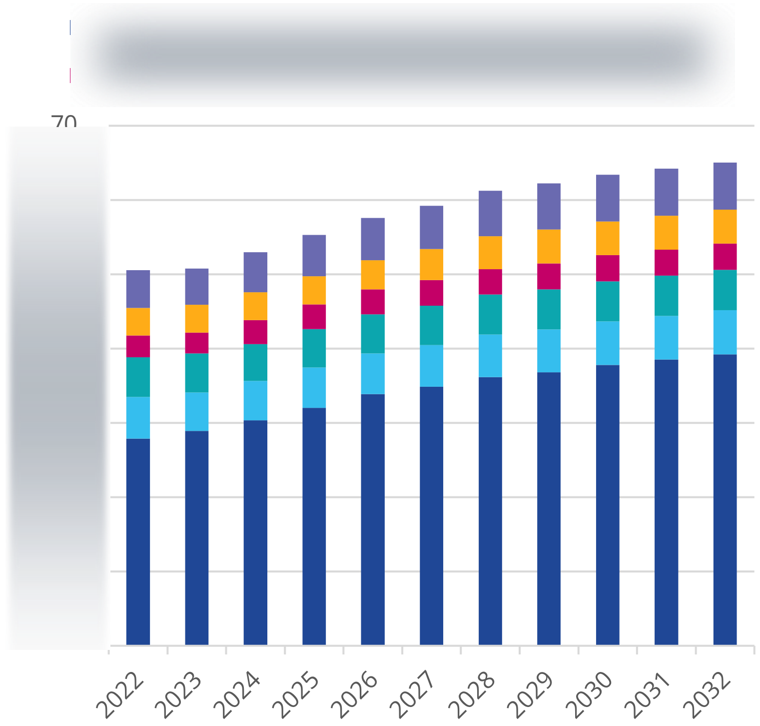
Global supply

As [redacted] investments continue in [redacted], [redacted] refinery-integration projects elsewhere are being paused or cancelled. The threat posed by broad [redacted] implementation is palpable but now thought less likely.

Global supply by source



Global supply by region

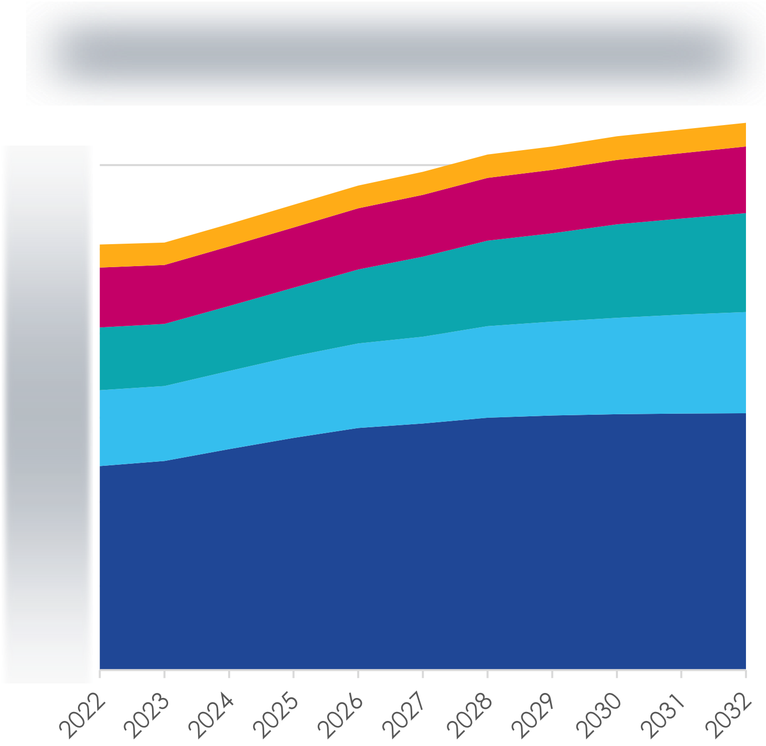


- Benzene recovery from [redacted] accounts for [redacted] of global production growth to 2032. This includes not only benzene recovery from [redacted] also conversion of [redacted] streams.
- Benzene recovery from [redacted] has been declining in importance with less than [redacted] of 10-year production growth being derived from expansion in [redacted] output.
- Benzene production from [redacted] primarily in China, still has huge merchant [redacted] Less than [redacted] of the next decades' production growth will come from [redacted] feedstock as environmental constraints cap operations.
- Close to [redacted] of global benzene production now comes from [redacted]. Almost all production growth is happening in the same areas of the world.

Global demand

A huge investment cycle in [redacted] capacity, mostly in [redacted] has suppressed margins across the [redacted] spectrum. The threat to western markets is in the form of waves of importe[redacted]

Global demand by derivative



Global demand by region

- Global [redacted]) demand continues to lag GDP and Chinese import volume is in decline. Net benzene consumption growth into [redacted] will account for less than [redacted] of the global total growth.
- [redacted] is the fastest growing benzene derivative, but consumption growth is slowing in a higher loan-cost environment.
- An investment cycle has propped up consumption growth, but growth rates are now slowing. [redacted] represents just under [redacted] of net consumption growth as supported by significant investment in [redacted] and [redacted] This growth will steadily slow as the new capacity is integrated into the market.
- A more specialty orientated [redacted] industry in the west is now being increasingly supplied with [redacted] to the detriment of local [redacted] consumption. Overall global benzene consumption growth into [redacted] is less than [redacted] of the total.
- Almost all net consumption growth is concentrated [redacted] Consolidation in the Atlantic Basin will continue as net derivative [redacted] are almost completely [redacted]

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North America: Key updates

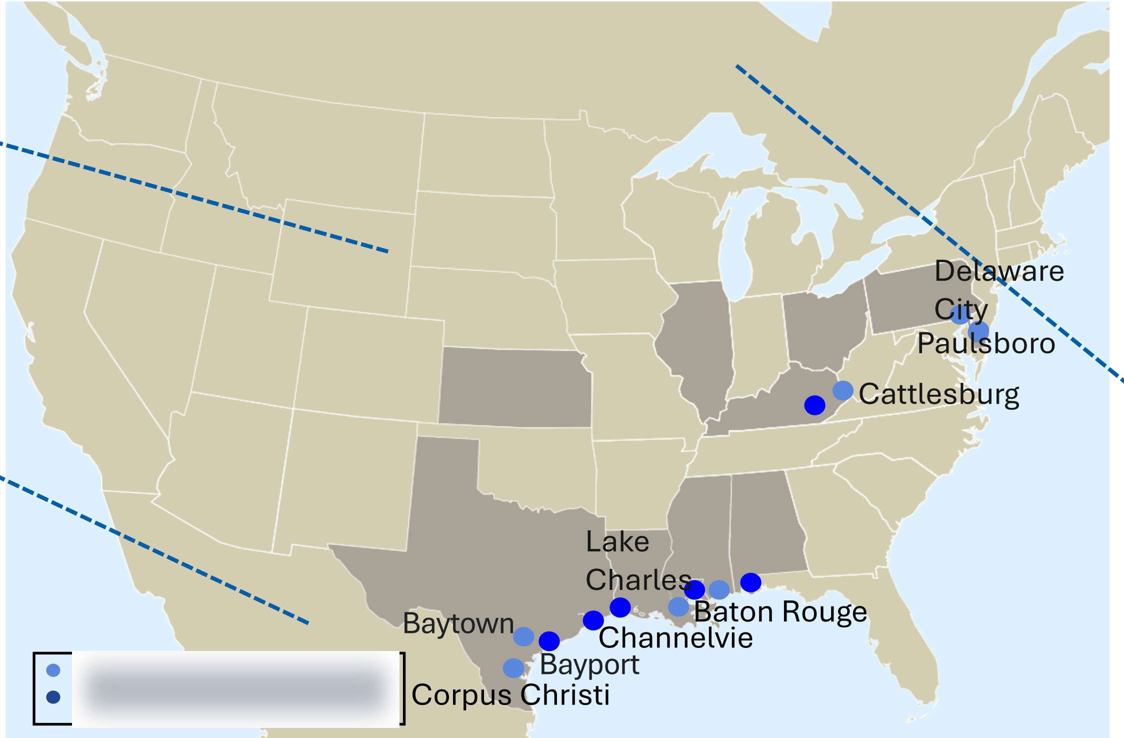
North America to continues to rely on [redacted] but its consumption and [redacted] are slowly being eaten away by [redacted] in the international arena.

Key Market Changes

Supply	Benzene supply has hit [redacted] due to reduced availability of feedstock [redacted] plus [redacted] alternative values for [redacted] in the gasoline pool.	**Demand**	US styrene monomer [redacted] are critical to benzene [redacted] as more SM is [redacted] than [redacted] within north America. High benzene [redacted] have reduced US competitiveness.	**Trade**	[redacted] exports out of [redacted] has left US buyers to search further afield, but the announced closure of some [redacted] capacity in Canada could change that.

US: The US has a long-standing [redacted] position on benzene, requiring net [redacted] well over [redacted]. The net [redacted] position has been in decline as US derivative [redacted] lack any real competitive advantage.

Mexico: Like in many other petrochemical value chains, Mexico has [redacted] as both a producer and consumer of benzene. This [redacted] is unlikely to change course within the forecast period.

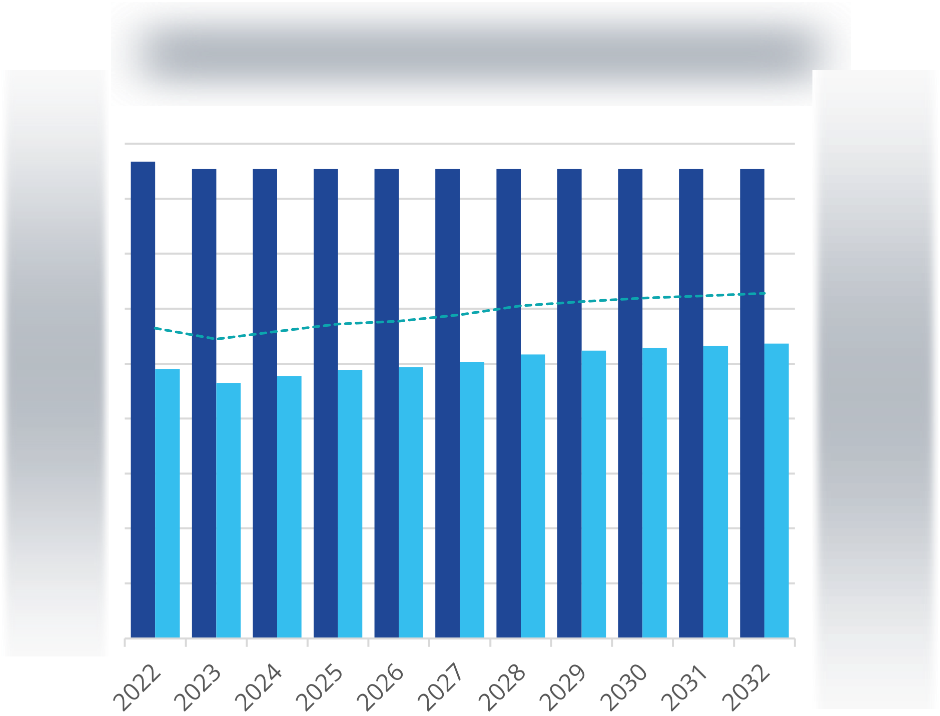


Canada: [redacted] benzene output is limiting exports from the [redacted] and adding to imports into the [redacted]. Domestic consumption has been erratic at times due to maintenance and unplanned outages. The announced closure of the [redacted] plant in [redacted] by 2026 will shift the balances once again.

North America supply/demand

The region is dependent on benzene [redacted] to feed its [redacted] exports. Consumption has been hampered by [redacted], erratic reliability, and [redacted]

US Benzene Production

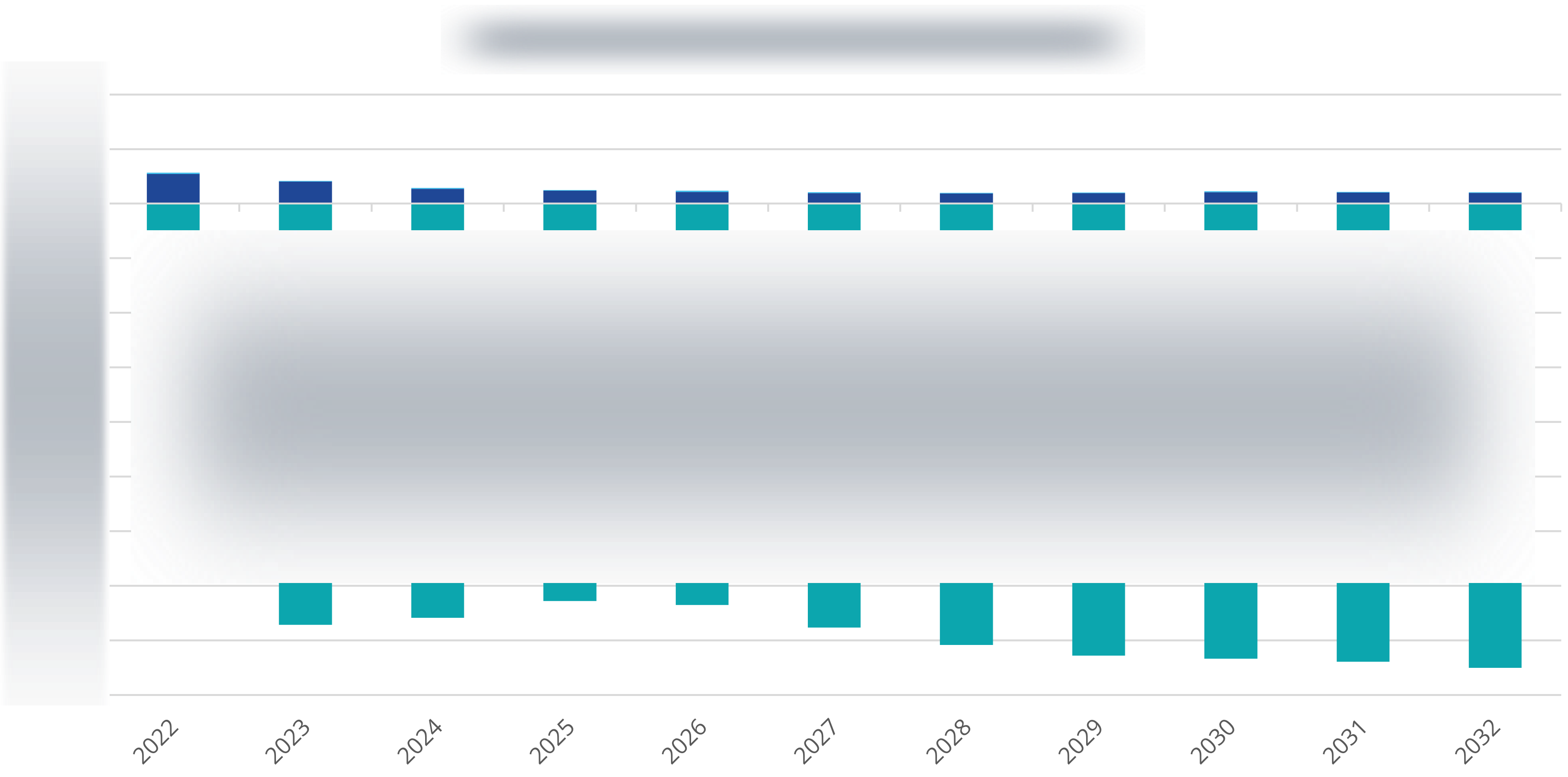


- Benzene production [redacted] has been in decline as refineries close and [redacted] process mostly [redacted]. The US dominates the region with near [redacted] of capacity to produce and near-[redacted] of all production output.
- North American benzene [redacted] has been in steady decline for some years due to reduced availability of feedstock [redacted] as [redacted] process mostly [redacted]. In recent years, higher alternative values for [redacted] in gasoline have further reduced output. This is impacting both benzene production and the competitiveness of the primary derivatives. Benzene production is primarily sourced from [redacted], and recently costs have been high. US supply has been impacted by ongoing net rationalization of its [redacted] as some refineries close, and expansions are typically for processing [redacted] with low [redacted] yields.
- Imports of benzene have been hampered by logistical challenges in the Panama Canal and via the Suez Canal. Charter costs have been extraordinarily high, further reducing competitiveness of [redacted] in the export markets.
- Domestic benzene [redacted] is seeing little underlying [redacted]. There has been rationalization in some [redacted] and new projects are having difficulty getting over the line due to more permitting challenges and high major project costs.
- Poor [redacted] export performance has been partially compensated for with sales of [redacted] into gasoline, but high benzene costs are now pricing EB out of contention.
- Consumption into [redacted] has also been supplemented by some blending into gasoline but this is [redacted] Underlying growth is lackluster and slowing. The phenol expansion at [redacted] near [redacted] remains paused.

North America trade

The availability of local regional benzene to meet the US net [illegible] need has been [illegible] forcing buyers to look [illegible] This is adding to [illegible] and [illegible]

Net Trade by Country



- The US is [illegible] most of its benzene from [illegible] and this has added cost and risk at the worst possible time. Shipping disruptions and freight costs have been at unprecedented levels, and costs are expected to remain elevated.
- Mexico will continue to be a [illegible] contributor to regional benzene trade, with [illegible] being the major movers.
- Traditionally Canada has been an [illegible] of both benzene and some of its [illegible]. This has changed in recent years as alternative values for [illegible] gasoline have increased and benzene output has [illegible] Feed benzene has been increasingly imported into the [illegible] from the US [illegible] and [illegible] but this will change post 2026.

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Northeast Asia: Key updates

China is to remain the largest [redacted] benzene in the world, while South Korea is [redacted] volumes of benzene as [redacted] suffer.

Key Market Changes

Supply	Operating rates in China are now being pulled [redacted] by ample [redacted] capacity, especially in [redacted] Significant new production capability has been absorbed, with operating rates running at [redacted] levels.	**Demand**	Significant new [redacted] capacity in China is supporting consumption but intense competition is also driving some rationalization in [redacted] capacity in traditional [redacted] countries like [redacted]	**Trade**	With increasing [redacted] operating rates in China, [redacted] imports have not [redacted] as much as expected. The outlook for [redacted] imports is stable but it is more in [redacted] where the trade battles are being waged.

China:
Calls for [redacted] on benzene have been premature as [redacted] expansions are [redacted] new production output.

Taiwan:
Benzene production output will see some [redacted] as margins [redacted] but consumption will also [redacted]

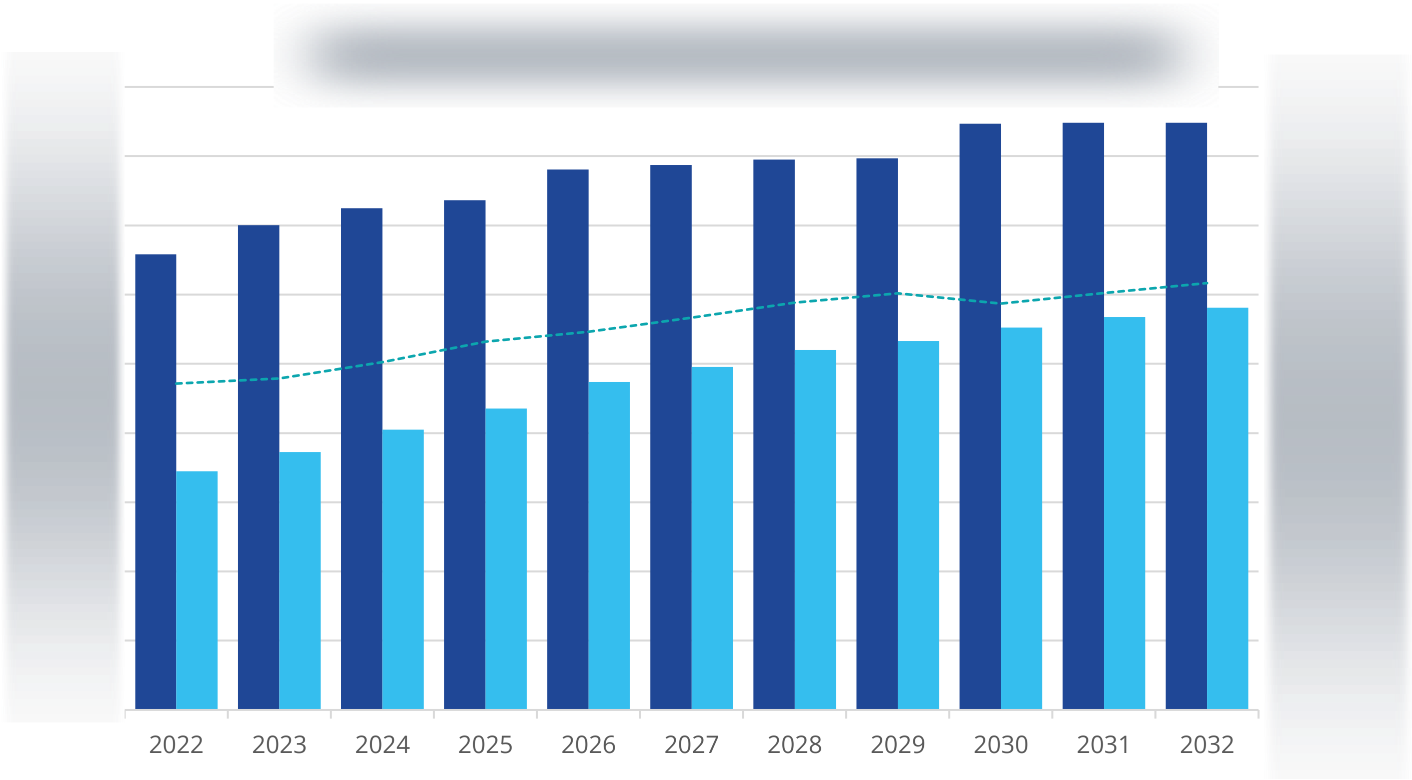
South Korea:
South Korea is expected to maintain record high [redacted] exports as [redacted] are driven lower by competition.

Japan:
Japan's [redacted] of its petrochemical capabilities is well underway as [redacted] have suffered intense international competition.

China supply

The window of opportunity for large-scale [redacted] investments is becoming less obvious and new projects are expected to remain somewhat limited.

China Benzene Summary



- Investments in large-scale [redacted] are expected to be somewhat limited, as the increments of capacity have become vast. Tie-ups between [redacted] and integrated chemical and polymer producers however will remain attractive as a strategy for integrated cost competitiveness and [redacted]
- New [redacted] investments in China continue to add to [redacted] supply, although there are several [redacted] projects in the mix. Most all of the [redacted] projects will have associated benzene recovery.
- The Chinese government's regulation to limit [redacted] export and environmental policies mean that new incremental petrochemical producing units should be followed with [redacted] facilities. Some provincial administrations, however, are still fostering [redacted] as a way of side-stepping the risk of [redacted]
- More firms are also taking carbon footprint and [redacted] account in new [redacted] investments. While carbon tax or similar cost regimes in Asia-Pacific remain sporadic in some countries and non-existent in others, companies are generally cognizant of its potential introduction further down the road.
- Outside of China, investments in new [redacted] units in NE Asia are expected to be very limited.

Northeast Asia demand

Many new-build projects have [redacted]y, with most capacity-pressure being felt in the [redacted]

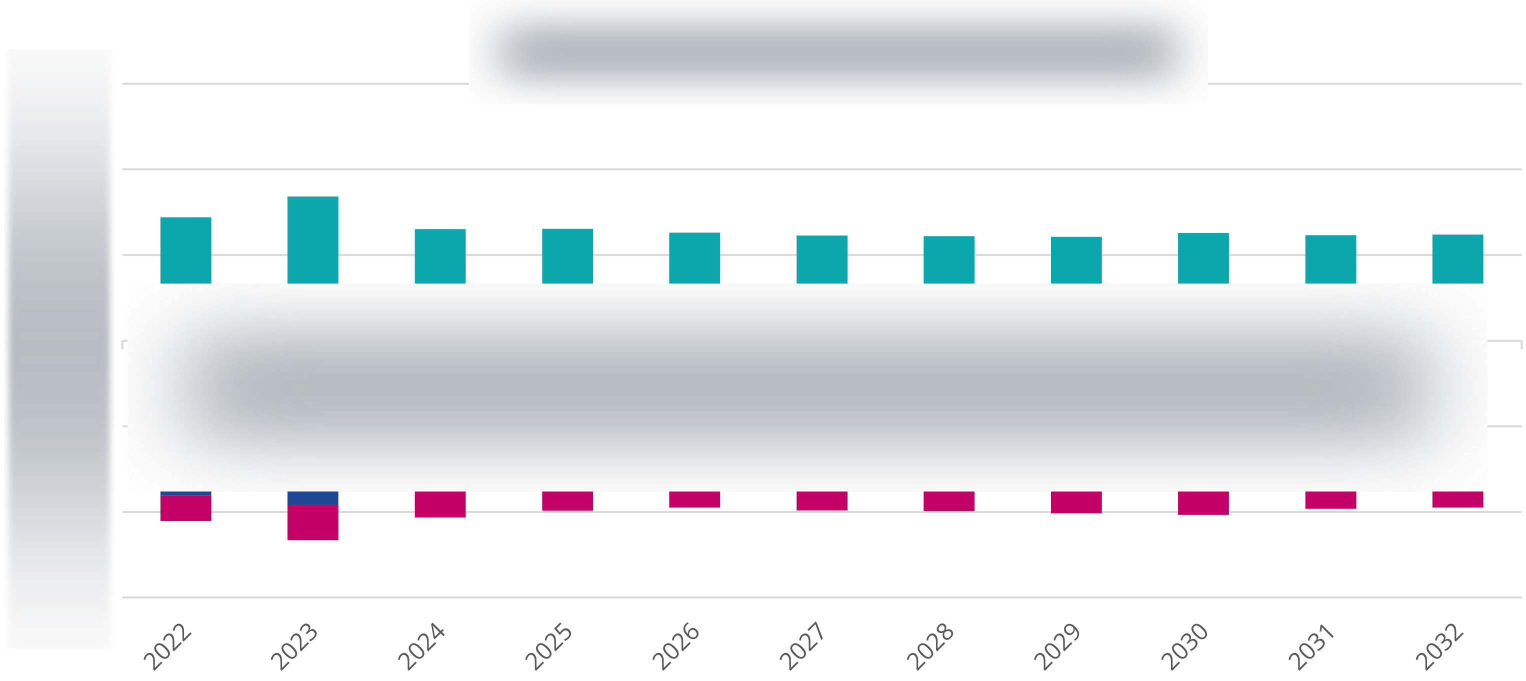
Demand by Country mn t/yr

- Plentiful investment in [redacted] acting to pass the pressure of excess [redacted] along to the [redacted] markets, rather than directly into the [redacted] merchant marketplace.
- Accordingly, benzene operating rates in the region are expected to [redacted] between now and 2032, although this will undoubtedly [redacted] as new projects are [redacted] The regional average however masks a disparity between the [redacted] of traditional [redacted] countries in Asia, and net [redacted]
- [redacted] the traditional benzene [redacted] will face a different picture. With rising [redacted] rates in China, benzene [redacted] will likely [redacted], increasing competition and compressing margins. Some rationalization of export-orientated capacity is anticipated.
- [redacted] for benzene is [redacted] in the short-term, as the Chinese economy struggles to reinstate consistent growth. This is holding back [redacted] growth as the primary beneficiary outside of China. [redacted] of benzene producing units in [redacted] are hence expected to struggle to reach pre-Covid levels even by [redacted]

Northeast Asia Trade

China remains unlikely to become [redacted], due to the focus on maximizing [redacted] production growth. Imports should [redacted], but with increased competition from [redacted]

Net Trade by Country Mn t/yr



- With increasing [redacted] in China, benzene imports are expected to [redacted] between 2024 and 2032. [redacted] remains elusive as [redacted] remains the priority in terms of product yields.
- [redacted] also traditionally a net [redacted] of benzene with nearly [redacted] likely [redacted] during 2023. With the continued start-up of new [redacted] units in China, [redacted]t position is however under threat. The country's benzene needs are expected to become increasingly [redacted], with [redacted] units becoming more sensitive to margin performance.
- [redacted] are expected to remain as the region's primary [redacted] position as an [redacted] will likely diminish with increasing consolidation of its petrochemical capabilities. Some rationalization [redacted] is also anticipated as competition for [redacted] builds.
- [redacted] outside of the region will remain [redacted]al in nature, especially if shipping costs remain elevated as expected.

We hope you found this sample report for Argus Benzene Analytics valuable.

The Argus Benzene Analytics service is for anyone engaged in the benzene market and seeking insight into the fundamentals driving key trends, including global supply, demand growth, trade, operating rates, etc.

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Methodology

Period presented

- The annual period for this study is the historical years 2018 through 2022, and forecast data for 2023 through 2032, inclusive.

Analysis and forecasting

- The Analytics service contains detailed information such as capacities, production, demand and trade for most producing and consuming countries in the world. Demand forecasts are based on relationships to derivative and end-use consumption trends and expected country-by-country economic growth projections.
- Argus uses data, market opinions and views on market trends to develop the medium-term supply and demand and corresponding price and margin forecasts. When appropriate, Argus makes adjustments to published data, for example trade data reported by countries or government-reported statistics.
- Although data gathering is essential to understanding the Benzene market's history and potential future trends, Argus believes the interpretation of this data is the most valuable part of this analysis.

Weights, currencies and percentages

- Unless explicitly stated, all weights are given in metric tonnes and all references to dollars are to US dollars.
- Currency conversions have been made either at a current or relevant historical exchange rate, as required by the context.
- Numbers may be rounded. This means that table totals may differ from the sum of the individual figures, and percentages may sometimes appear not to total exactly 100pc.

Your feedback is welcome

- Argus thanks our valuable clients and contacts for sharing opinions and expertise during the compilation process. Data verification is the cornerstone of to the quality of the analysis, and the input received from global market participants is critical to arriving at logical and realistic conclusions.
- It is important that this product meets client's expectations, and we encourage feedback to ensure continuous improvement. If additional company-specific or more detailed long-term analysis is desired regarding Benzene or other petrochemicals, please contact the *Argus* team.

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Indexation examples

Argus postings dominate contract settlement pricing in the US. Monthly weighted spot average included in a number of US contracts in the trading arena.

Argus daily Benzene price is the settlement basis for the CME futures trading platform in the US. EU likely soon to follow

Argus weekly prices penetrating Middle East/Asia-Pacific contract settlement reference pricing beginning in 2019.

Argus Benzene experts

Simon Palmer
Vice President
Global Aromatics

Simon Palmer joined Argus as VP, Global Aromatics in August 2021, and is based in Houston. He brings to Argus broad experiences from across the petrochemical industry. He has worked in hydrocarbon processing, plastics manufacturing, market consulting, petrochemical trading, major project management and strategy/business development. He spent his formative years in Europe working for ICI plc before moving to the USA. In the US he has spent around twenty years in market consulting specializing in aromatic hydrocarbons. He joined Argus after Motiva Enterprises, a wholly-owned affiliate of Saudi Aramco.

Monicca Egoy
Editor,
Europe Aromatics

Monicca Egoy is the editor in charge of the aromatics market in Europe, based in London. She mainly covers the benzene and styrene markets, as well as overseas coverage and publication of Argus' daily and weekly aromatics reports. She joined Argus in early 2013 when it was forming the petrochemicals team and integrating DeWitt, which it acquired in 2012. Prior to joining Argus, Monicca was an editor at S&P Global Platts, covering polymers and olefins. Additionally, she has years of experience covering the energy and financial markets, having worked at AFX Financial News, Thomson Financial News, and ThomsonReuters in Europe and Asia. Monicca holds a master's degree in Global Politics from Birkbeck College, University of London, and a bachelor's degree in Accounting and Management from the Polytechnic University of the Philippines.

Brian Leonal
Associate Editor,
Asia Aromatics

Brian Leonal is responsible for the coverage of benzene and styrene in Asia-Pacific. He has seven years of experience in the hydrocarbon industry. Most recently he was a corporate banker in DBS Bank covering oil and gas as well as petrochemical markets. He has been involved in a diversity of transactions, including asset-backed, project, trade, and M&A financing, as well as clean corporate loans. He started his career in Argus in 2015 as part of the petrochemical team, with exposures to olefins, aromatics, and polymers.

Santosh Navada
Senior Analyst

Santosh is a senior business analyst, based in Mumbai. He supports aromatics and other related product areas for Asia-Pacific region. In addition to an undergraduate degree in chemical engineering, he has garnered market research experience from companies including MarketsandMarkets, Bureau Veritas and AgileIntel. In these roles, he was involved in projects related to chemicals and materials domain.

Jeff Eickholdt
Senior Analyst

Jeff is a Senior Analyst in the Chemicals sector supporting Aromatics. Prior to joining Argus, Jeff worked for Shell for over 20 years in various roles, most recently as a Risk Analyst in their Chemicals division where he advised commercial and finance staff on pricing structure, risk management, and contract development. Beyond his tenured career at Shell, Jeff holds a certification from Rice in Data Analytics, as well as a BA and MS in Statistics.

Argus benzene analytics

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