

NOCs (Re)diversification – Petrochemistry in Focus

Introduction

As global energy markets face the (foremost) unprecedented uncertainty, when investments in renewables are under political pressure and oil companies are retreating from «green» projects, National Oil Companies [NOCs] are turning toward a more pragmatic diversification plan: petrochemicals. This shift capitalizes on robust market fundamentals, with the global petrochemicals sector projected to exceed \$1 trillion by 2033, driving over one-third of oil demand growth through 2030.

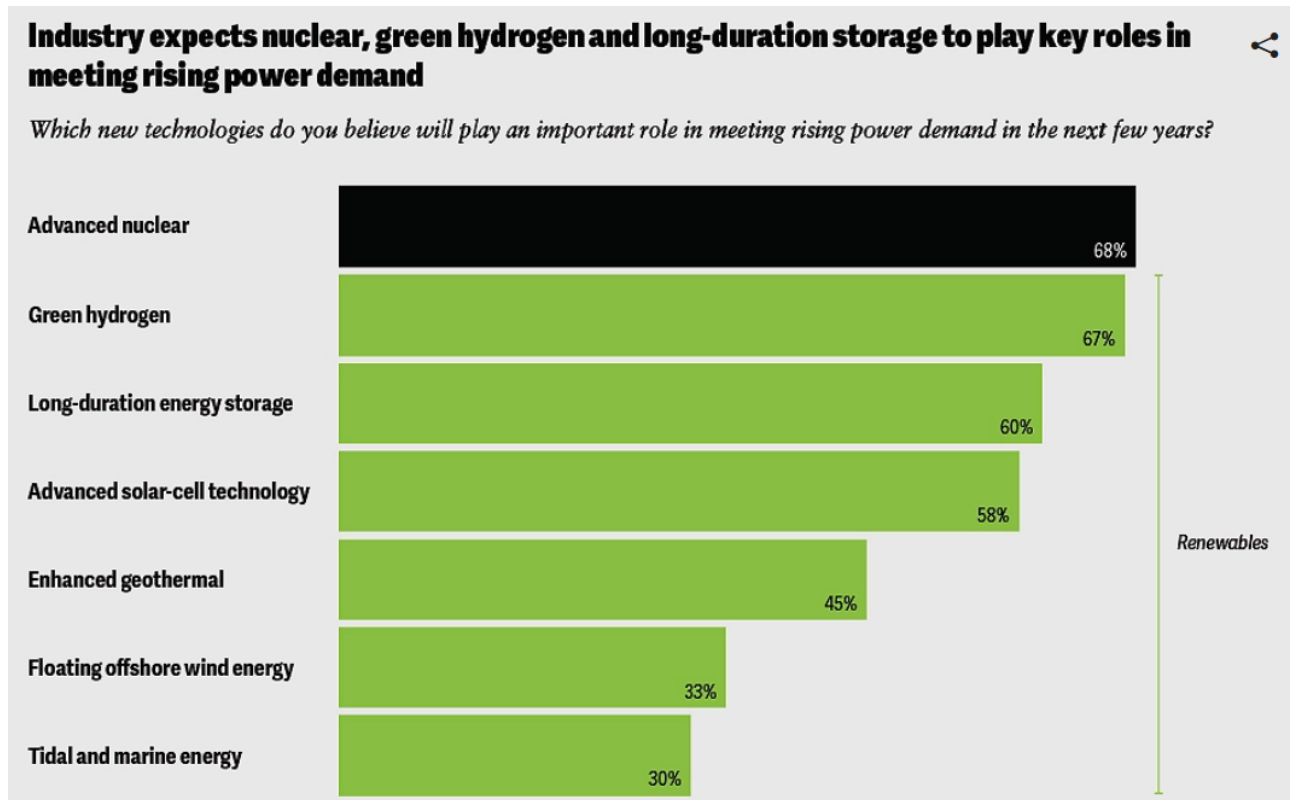
Kazakhstan also illustrates this strategic opportunity. Currently refining only one-fifth of its crude oil production, which is far below the standards of developed countries, the nation has launched an ambitious \$15 billion petrochemical investment program targeting significant production growth by 2030. This focus addresses both urgent domestic demand from Kazakhstan's rapidly expanding automotive and food processing industries and the country's aspiration to become a regional petrochemical hub serving Eurasian markets. By processing crude oil into high-value chemicals rather than exporting crude oil (and natural gas), Kazakhstan can capture significantly more economic value per barrel or cubic meter while building the industrial capabilities necessary for broader economic diversification beyond commodity dependence.

The world's largest NOCs, which are frequently used as benchmarks, are Saudi Aramco [Saudi Arabia], ADNOC [UAE], CNPC [China], Petrobras [Brazil], and Equinor [Norway]. Kazakhstan's national oil company is [KazMunaiGas](#), which is the entire industry's flagman.

Focus shifting from renewables to petrochemicals

The energy industry has witnessed a clear shift toward diversification into renewables over the past several years. However, this trend is not so obvious anymore. Of course, there are some fundamental factors still supporting the trend of previous years demonstrating urgency for NOCs' diversification towards renewables. For example, according to [Deloitte's 2025 Renewable Energy Industry Outlook](#), the renewable energy sector faces unprecedented demand growth, with data centers alone expected to drive approximately 44 GW of additional demand by 2030 in the U.S. market. In addition, [BloombergNEF's New Energy](#)

[Outlook 2025](#) indicates that global CO2 emissions may have peaked in 2024, with 2025 potentially marking the first year of structural emissions decline globally. Both trends urge NOCs to adapt swiftly and decisively.



Source: Deloitte, Renewable Energy Industry Outlook 2025 [December 2024]

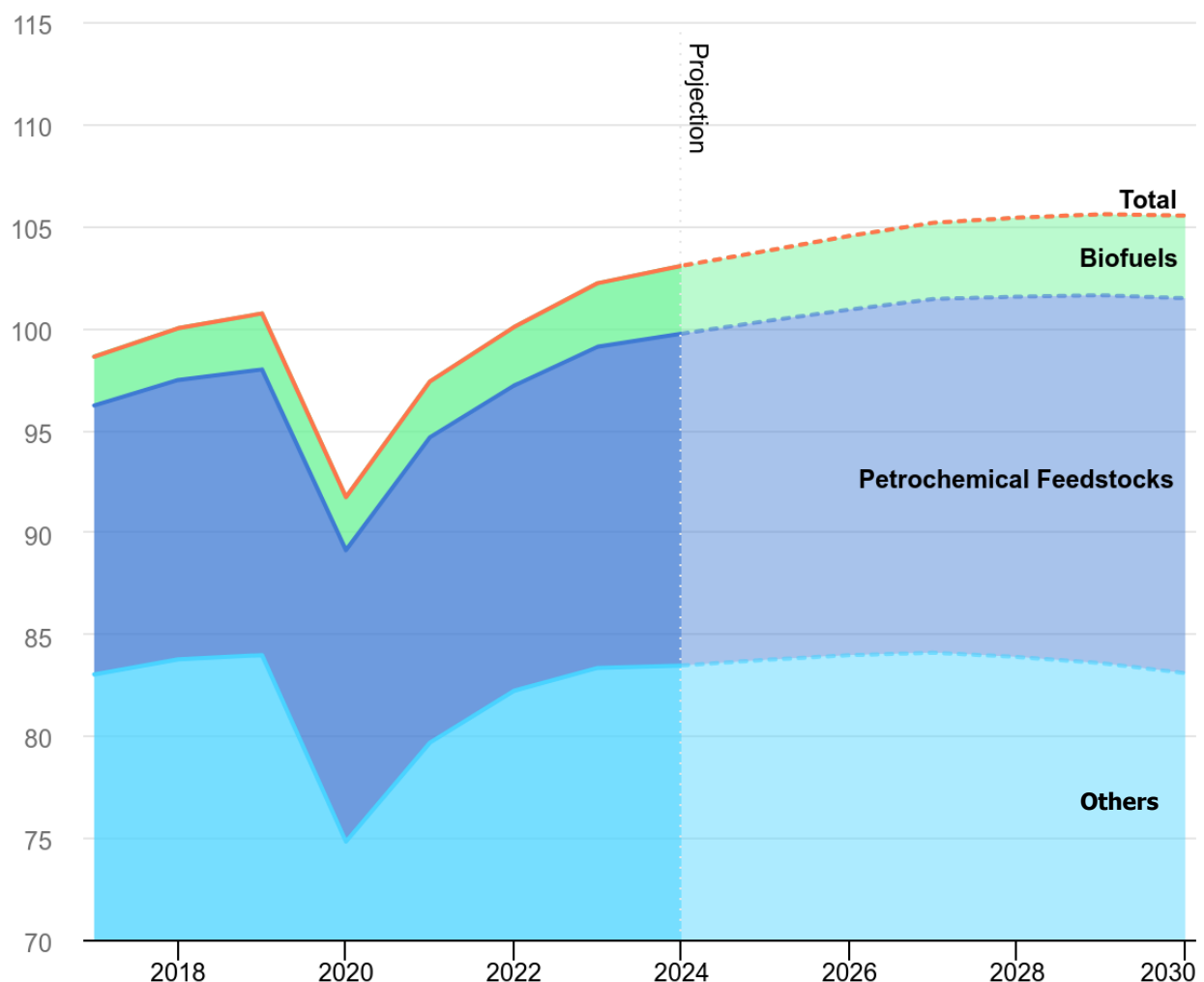
Change of perception toward renewables accompanied by dramatic political rhetoric and policy redirection. During the U.N. assembly in September 2025, President Trump even [called green energy a "scam"](#) while his 2024 election campaign's main motto was "Drill, baby, drill." This rhetoric has translated into concrete policy actions: the President Trump administration has already cancelled nearly [\\$8 billion in clean energy projects across 16 states](#), with an additional [\\$12 billion in funding potentially on the chopping block](#). As a result, the International Energy Agency [IEA] slashes U.S. renewables growth expectations [by almost 50%](#), while large oil and gas corporations like Chevron and BP [are aggressively cutting their renewables projects' budgets](#). Speaking about NOCs, Equinor also [significantly decreased its "green" budget](#) in early 2025. Not NOC, but 50% state-owned Ørsted, [forced to refocus \(windfarms\) to Europe from the USA and lay off 25% of its headcount in 2025-2027](#).

In this uncertain landscape, diversifying by investing more in petrochemicals looks like a sound strategy, which we see from the example of several large state-owned companies. It is reasonable, as we see that the demand for polymers is expected to steadily grow over the next decade. The data strongly support this strategic turn.

Petrochemicals are compounds of petroleum and natural gas. While oil refineries transform crude oil into fuels like gasoline and diesel, petrochemical plants use similar feedstocks (ethane, propane, and naphtha) to produce core chemicals such as ethylene, propylene, and benzene. These basic chemicals are then converted into plastics, synthetic fibers, pharmaceuticals, fertilizers, and thousands of other products that define modern life.

According to multiple industry forecasts, the global petrochemicals market is projected to grow at a [CAGR of 5.5% by 2033](#), with the market size expected to reach over \$1 trillion by 2033. More specifically, the production of polymers and synthetic fibers will require [18.4 million barrels per day of oil by 2030](#), or more than one in every six barrels.

Global oil demand forecast, 2017-2030



Source: IEA, Oil 2025 [June 2025]

This growth is particularly pronounced in developing economies. [Asia-Pacific, led by China and India, is projected to contribute nearly 60% of global petrochemical demand growth by](#)

[2030](#), driven by urbanization, infrastructure projects, and manufacturing expansion. The polymer segment specifically shows robust fundamentals, with [ethylene demand expected to remain the dominant product category](#), accounting for over 40% of the petrochemical market.

NOCs are expanding their petrochemical footprint

State-owned oil companies are capitalizing on the diversification trend through massive downstream investments that dwarf their renewable energy commitments. Saudi Aramco [plans to convert up to 4 million barrels per day](#) of crude oil into petrochemicals by 2030, while its [mega-scale acquisition of SABIC for \\$69.1 billion in 2020](#) has positioned it as a major global petrochemical player with operations in over 50 countries. Similarly, ADNOC continues its aggressive downstream expansion, leveraging the region's cost advantages in feedstock availability as the company continues to execute on its massive strategic [\\$45 billion downstream expansion initiative](#). In one of the fresh releases, ADNOC's management reiterated its commitment to expand petrochemical footprint and to become [a top-3 petrochemical business globally](#) over the long term.

China: several integrated sites already operational or coming online in the next few years

Project	Refinery Capacity (MMt)	P-Xylene Capacity (kMt)	Ethylene Capacity (kMt)	Propylene Capacity (kMt)	Est. Chemical conversion/ bbl. of oil (%)	Investment (\$bn)	Full line Operation
Hengli Petrochemical	20	4.3	1.5	1.0	42	11.4 (Excl. Cracker)	May 2019
Zhejiang Petroleum and Chemical (ZPC) Phase 1	20	4.0	1.4	0.65	45	12	Dec. 2020
Hengyi (Brunei) PMB Refinery-Petrochem Phase 1	8	1.5	0.5	0.2	>40	3.45	Nov. 2019
Zhejiang Petroleum and Chemical (ZPC) Phase 2	20	4.8a	1.5	0.7	50*	12	Jan. 2022
Shenghong Refinery and Integrated Petrochem	16	4.0c	1.4c	0.5	60b	9.6c	2022
Hengyi (Brunei) PMB Refinery-Petrochem Phase 2	14	2.0	1.5	0.7	>40	10	2022
Tangshan Xuyang (Risun) ^a	15	3.5	1.5	0.6	>50	8.5	On Hold
Shandong Yulong (Phase 1) ^e	20	3.5 (Mx & Ox)	3.0	1.2	>50	20 (1st phase)	2024 (1st phase)
Total	133	27.6	12.3	5.6	--	87	--

Source: S&P Global Commodity Insights, Astana Market Briefing [May 2025]

China's state-owned giants are equally aggressive in their petrochemical expansion. [CNPC, Sinopec, and CNOOC have distinct strategic focuses](#), with Sinopec particularly concentrated on downstream refinery and petrochemicals operations. Sinopec operates massive facilities, including the Zhejiang Oil Products Company, one of the world's largest refineries, that

prioritize non-fuel chemical production at notably higher rates than comparable facilities. The company has also expanded through strategic partnerships, including major ethylene projects with Saudi Aramco worth [\\$9.8 billion in additional investments scheduled for completion by 2030](#).

In general, China has built enormous petrochemical capacity over the past decade, much of which remains underutilized, while European producers are shuttering plants due to high energy costs and regulatory pressures. Petrochemical facilities located in Europe face significant competitive disadvantages due to their limited operating leverage, which stems from their smaller-scale operations. This capacity buildup positions China to dominate global petrochemical markets as Western competitors retreat, fundamentally reshaping the industry's geographic center of gravity.

There are a few other large petrochemical projects planned by some of the world's other largest NOCs. India's Oil and Gas Natural Corporation [ONGC] has a plan to invest more than \$1 billion in the expansion of its petrochemical capacity between 2028 and 2030. The new projects [are intended to boost](#) ONGC's current petrochemical production capacity of about 3.4 million tonnes/year [tpy] to at least somewhere between 8.5-9 million tpy by 2030.

Indonesian state oil company Pertamina, in partnership with Russia's Rosneft, is developing a major petrochemical complex with a refining capacity of [15 million tpy](#). While the complex is targeted to [commence commercial operations in 2028](#), the Final Investment Decision (FID) remains pending shareholder approval amid ongoing geopolitical uncertainties and sanctions affecting Rosneft. [Iran's petrochemical sector is reportedly set for a major expansion](#) with 15 new production projects in the pipeline, which are expected to add nearly 10 million tons of new production capacity.

The strategic rationale is convincing: unlike renewable energy investments that currently face policy uncertainty and require massive upfront capital with longer payback periods, petrochemical investments offer more immediate returns while building on existing hydrocarbon infrastructure. So called "the integrated expansion strategy" allows NOCs to capture more value from their crude oil while diversifying revenue streams, which is a particularly attractive proposition when facing volatile oil prices and shifting energy policies.

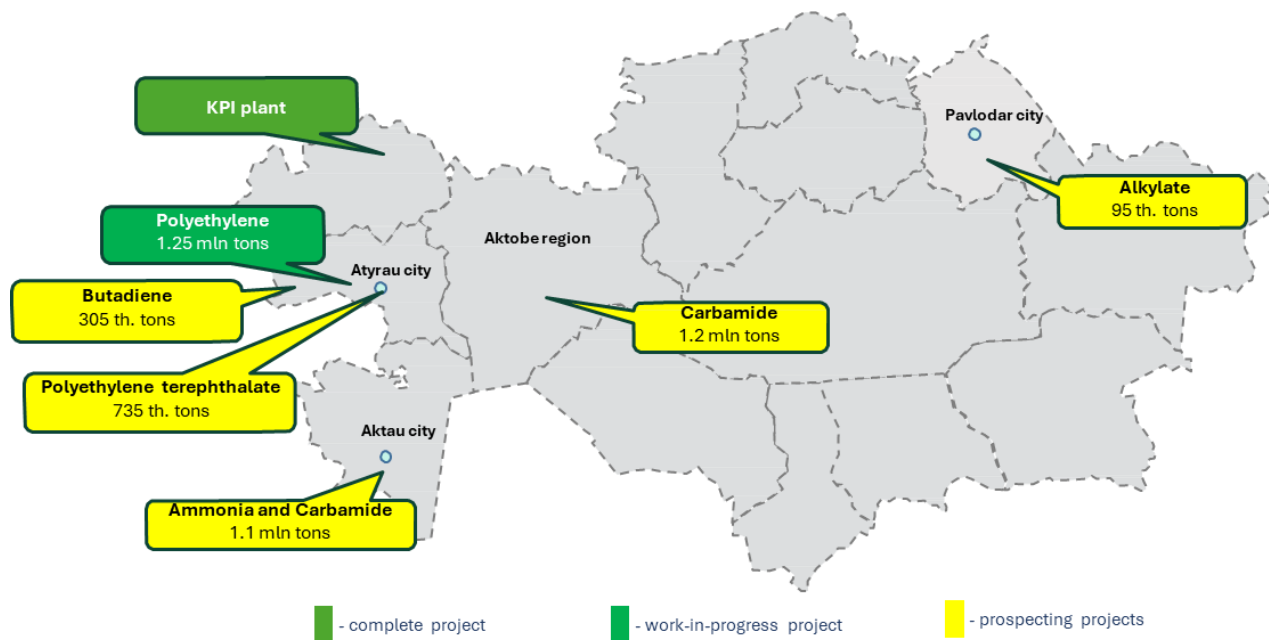
This approach allows companies to hedge their bets: maintaining strong cash flows from traditional operations while positioning for long-term growth in essential chemical products that underpin modern life, from packaging and construction materials to automotive components and medical equipment. The investments also align with growing polymer demand, particularly in developing economies where petrochemicals are projected to account for a substantial portion of oil demand growth over the next decade.

Kazakhstan: from resource abundance to value creation

Kazakhstan refines [only 1/5 of the crude oil it produces](#), a level significantly lower compared to developed countries (OECD countries, on average, refine almost half of the oil produced). This situation presents the call for action for KazMunaiGas, which is a main consolidator and driver of petrochemical projects in Kazakhstan, particularly as global markets increasingly reward downstream integration and value-added production over crude oil exports.

The country has [accelerated petrochemical development](#) with a \$15 billion investment plan for 2024-2030, creating approximately 3,500 permanent and 16,000 temporary jobs. This represents a significant shift in the Kazakhstan's economic strategy, moving beyond its traditional role as a crude oil exporter toward becoming a regional petrochemical hub.

In 2024, [petrochemical production reached 540,000 tons, up 50% from the previous year](#). The launch of a new paraxylene production unit at Atyrau oil refinery in March contributed an additional 33,800 tons to output. According to Government projections, Kazakhstan's petrochemical production is set to increase from 357,800 tons in 2023 to 1.8 million tons by 2030, which is a five-fold expansion. These ambitious plans were fixed in [the Roadmap for the development of Kazakhstan's petrochemistry industry in 2024-2030](#).



Source: Ministry of Energy of the Republic of Kazakhstan, adapted from Russian by ENERGY Insights & Analytics

The major upcoming project is the Silleno Polyethylene Plant project [set to produce 1.25 million tons annually by 2029](#). In addition, according to the petrochemical projects map

above, there are a few other notable projects in the pipeline, including plants for producing butadiene, polyethylene terephthalate, carbamide, ammonia, and alkylate. These projects reflect Kazakhstan's commitment to capturing more value from its hydrocarbon resources through sophisticated downstream processing.

The downstream expansion transcends mere alignment with global diversification trends. It is a response to urgent domestic demand from rapidly developing industries requiring sophisticated petrochemical inputs. Kazakhstan's industrial transformation creates a compelling domestic market for these products, simultaneously reducing import dependence and reinforcing broader economic diversification objectives. Below are some of the areas that could become major drivers for demand of petrochemical products.

Automotive sector growth. Kazakhstan's automotive industry has become a regional powerhouse, with production reaching [147,400 vehicles in 2024](#). The industry leader, Allur, operates with an annual production capacity of up to 125,000 vehicles in Kostanay, manufacturing vehicles under Kia, Chevrolet, Skoda, JAC, Jetour, and Hongqi brands. Two new automobile plants are set to launch in 2025, including a [KIA plant in Kostanay](#) and a [Chinese multi-brand plant in Almaty](#). This automotive boom creates substantial demand for petrochemical-derived materials, including plastics for interior components, synthetic rubber for tires, and specialized polymers for automotive parts.



Source: Stankevicius Group [April 2025]

Localization drive. Automotive parts and accessories production reached record levels of 453 million KZT (\$968 thousand) in 2024, compared to just 76.5 million KZT (\$185 thousand) in 2020, a nearly six-fold increase that demonstrates the rapid pace of industry localization. Key developments include the [Allur-Tatneft joint venture tire plant in Saran](#) (3 million tires for passenger vehicles annually), battery production exceeding [3 million units annually](#), and expanding production of automotive seats and multimedia systems. This localization trend creates a self-renewal cycle where domestic petrochemical production supports local manufacturing, which in turn drives further demand for chemical inputs.

Food industry and potential in packaging. Kazakhstan's food processing sector is experiencing robust growth, with the market [projected to grow at a CAGR of 6.1% during 2024-2030](#), reaching \$8.7 billion by 2030. This expansion creates substantial demand for packaging materials, food-grade plastics, and preservation chemicals, all derived from petrochemical feedstocks. The country's position as a major agricultural producer, ranking as one of the top wheat producers globally, means that value-added food processing requires sophisticated packaging solutions to maintain quality during storage and transport to regional markets.

While Kazakhstan's ambitious petrochemical development roadmap presents significant opportunities for economic diversification, the industry faces a fundamental challenge that requires careful consideration. It is vital to keep in mind that in Kazakhstan, refineries are significantly dependent on crude oil from [mature oilfields](#). As outlined in the [Kazakhstan Energy Outlook 2025](#), oil production from mature oilfields in Kazakhstan is projected to decline from 30 million tons in 2024 (34% of Kazakhstan's total oil production) to 24 million tons by 2030 (26% of Kazakhstan's total oil production). Additionally, [most of the natural gas is concentrated in Kazakhstan's megaprojects](#), and its availability for petrochemical production (or any other use instead of reinjection) remains an issue. Therefore, the long-term sustainability of feedstock supply for petrochemical projects remains a critical concern that must be addressed through enhanced oil recovery techniques, exploration and exploitation of new reserves, and strategic alignment to ensure the viability of the planned \$15 billion petrochemical investment program.

The Bottom Line

By processing crude oil into high-value chemicals rather than exporting it as raw material, Kazakhstan can capture significantly more economic value per barrel while building industrial capabilities that support broader economic development. The country's vast hydrocarbon reserves, combined with its strategic location between major consumer markets in China, Russia, and Central Asia, position it to become a regional petrochemical hub that serves growing demand for plastics, synthetic materials, and specialty chemicals across Eurasia.

This strategic choice also addresses a critical vulnerability in Kazakhstan's economy: its heavy dependence on commodity exports. By developing sophisticated downstream industries, the country creates more stable revenue streams, higher-skilled employment opportunities, and industrial capabilities that can adapt to changing global energy markets. The success of this petrochemical expansion will determine whether Kazakhstan can successfully transition from a resource-dependent economy to a more diversified, value-added industrial base.

ENERGY Insights & Analytics

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The key tool and product of ENERGY Insight & Analytics is internally developed software - [the Analytical Platform EXia](#), aimed to identify, localize, format, and present data most efficiently for the specified use cases.

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