

Escenario Global de GLP

Riesgos y oportunidades

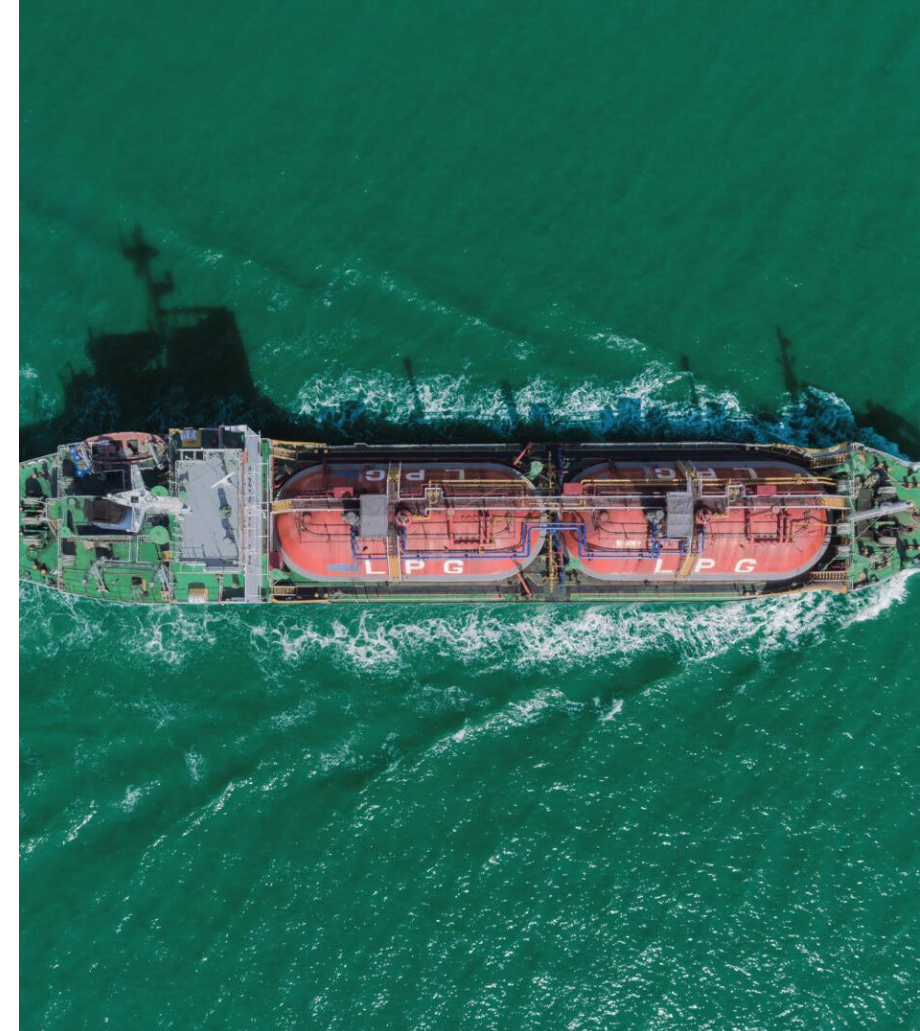
Adrian Calcaneo

Executive Director & Latin America Lead

Midstream Assets & LPGs/NGLs

Fuels, Chemicals & Resource Solutions

March 24, 2023



Nuevo nombre, análisis mas profundo.



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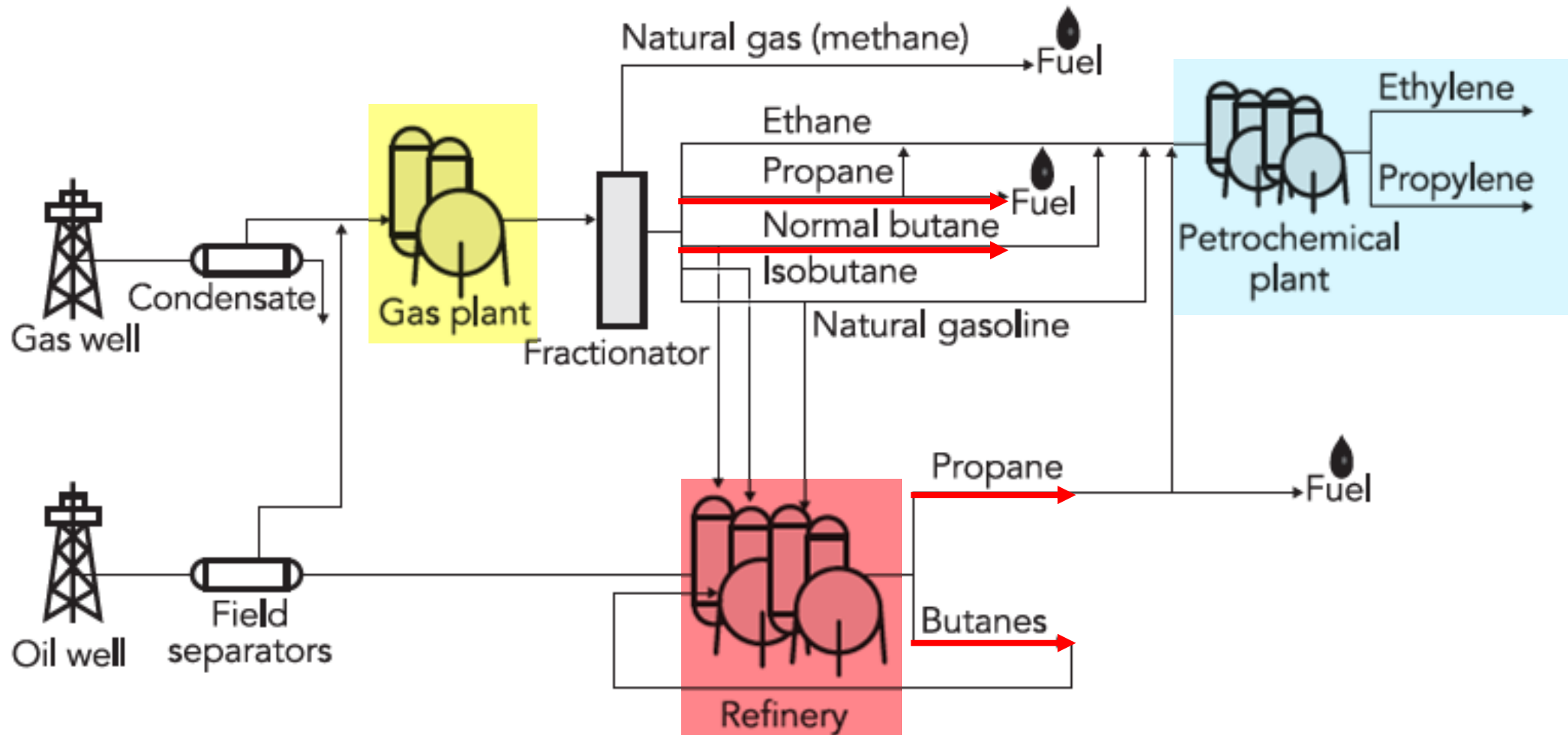
S&P Global

Commodity Insights

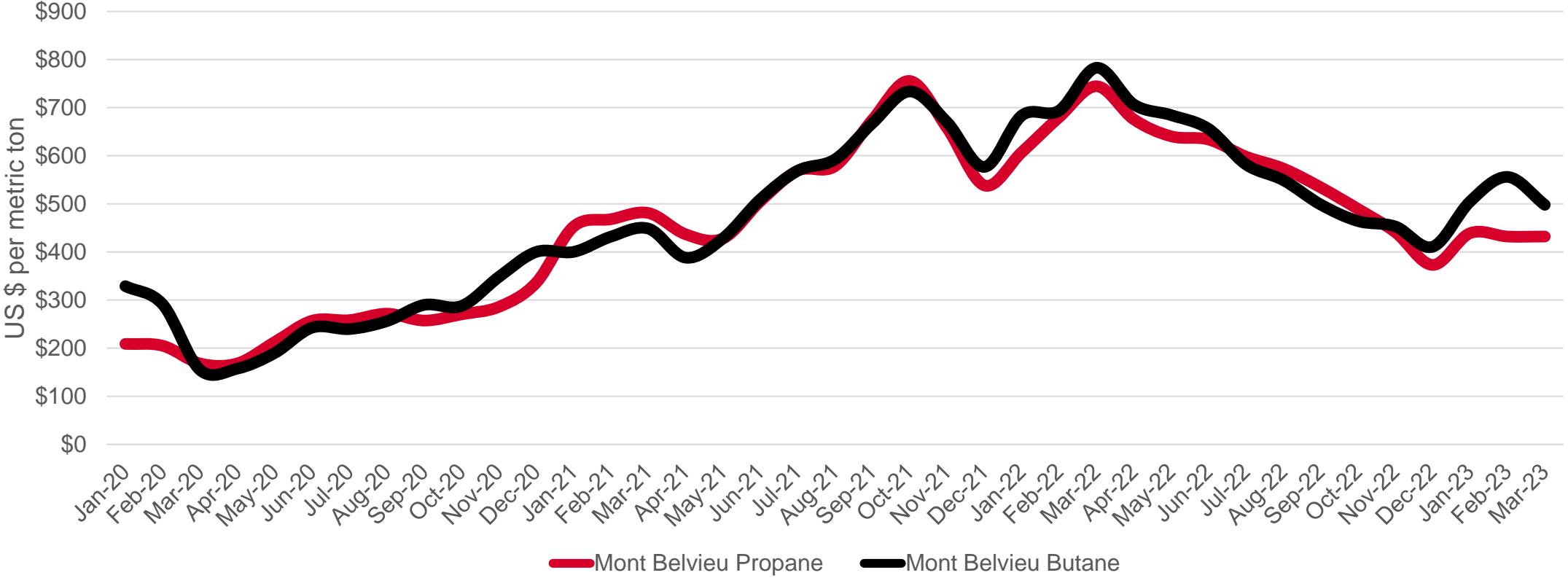
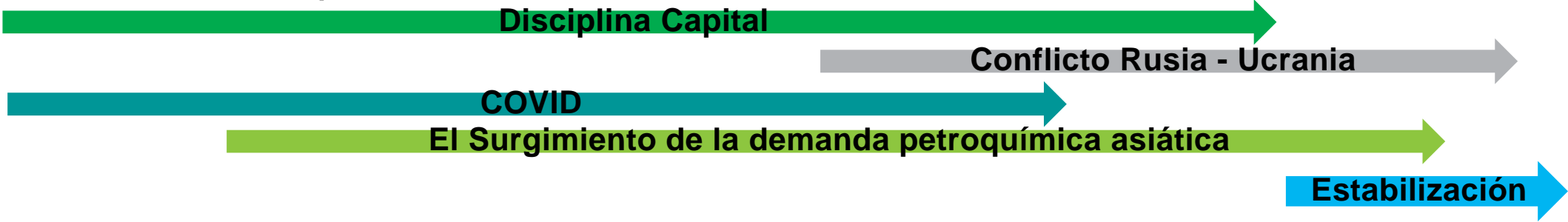
Conceptos fundamentales del mercado del Gas LP



Suministro y demanda del Gas LP



Causas del alza del precio referencia desde el 2020:

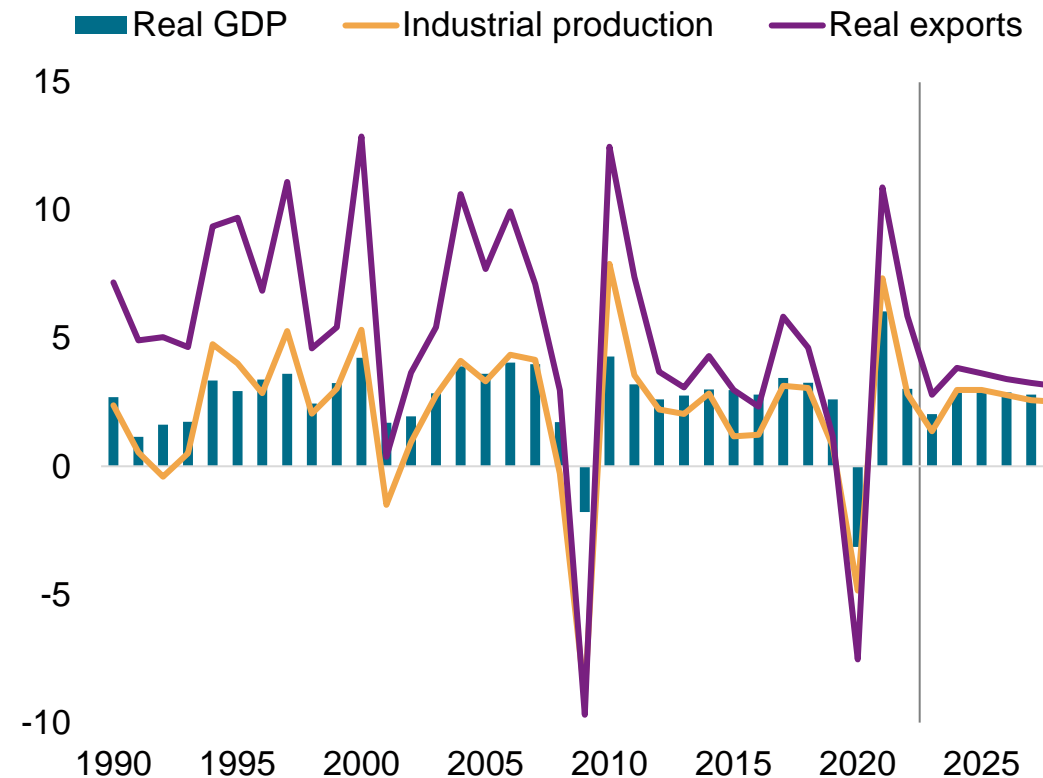


Perspectiva Global



El crecimiento económico mundial se enfría a medida que aumentan las tasas de interés suban.

Global real GDP, industrial production, and real exports of goods and services



Data compiled Feb. 15, 2023.
Source: S&P Global Market Intelligence.

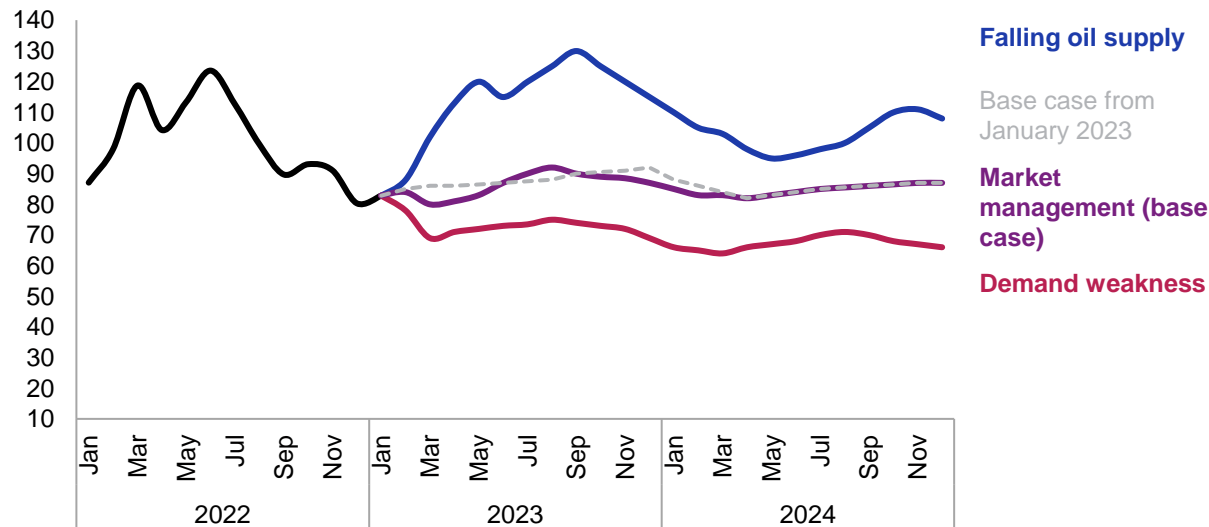
Real GDP (% change)

	2022	2023	2024	2025
World	3.0	2.0	2.9	3.0
United States	2.1	0.7	1.6	2.0
Canada	3.6	0.9	1.5	1.8
Eurozone	3.6	0.5	1.4	1.9
United Kingdom	4.1	-0.4	0.6	1.3
Mainland China	3.0	5.2	5.6	5.0
Japan	1.0	1.2	1.2	1.0
India*	7.0	5.4	5.9	5.7
Brazil	2.9	1.7	2.2	3.2
Russia	-2.8	-3.0	1.6	1.9

Data compiled Feb. 15, 2023.
*Fiscal year starting Apr. 1, 2023
Source: S&P Global Market Intelligence.

El escenario base del precio del petróleo asume un fuerte crecimiento de la demanda china además de ganancias en la oferta fuera de la OPEP, mientras que la producción rusa muestra resiliencia.

Dated Brent price scenarios (\$/bbl)



Dated Brent annual average price (\$/bbl)

	2022	2023	2024
Historical	\$101	-	-
Market management (base case)	-	\$87	\$85
Falling oil supply	-	\$114	\$103
Demand weakness	-	\$72	\$68

Data compiled Feb. 15, 2023.

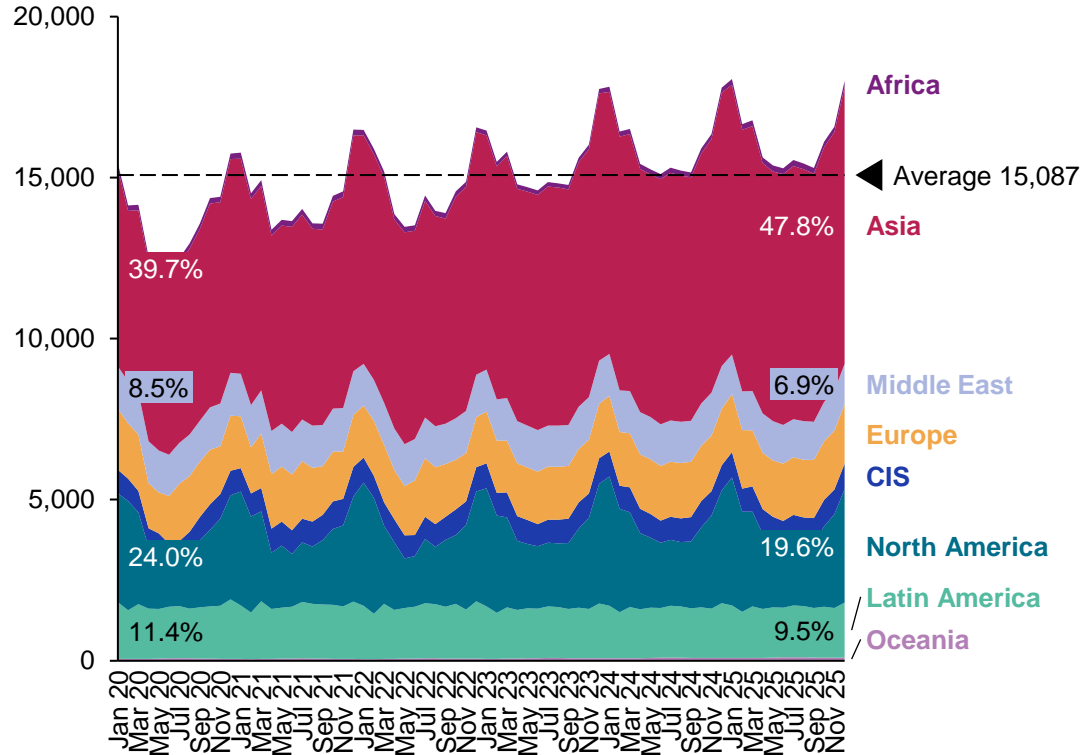
Prices shown are indicative monthly price averages and not intended to project daily/weekly high and low prices.

Sources: S&P Global Commodity Insights; Argus Media Limited (historical prices).

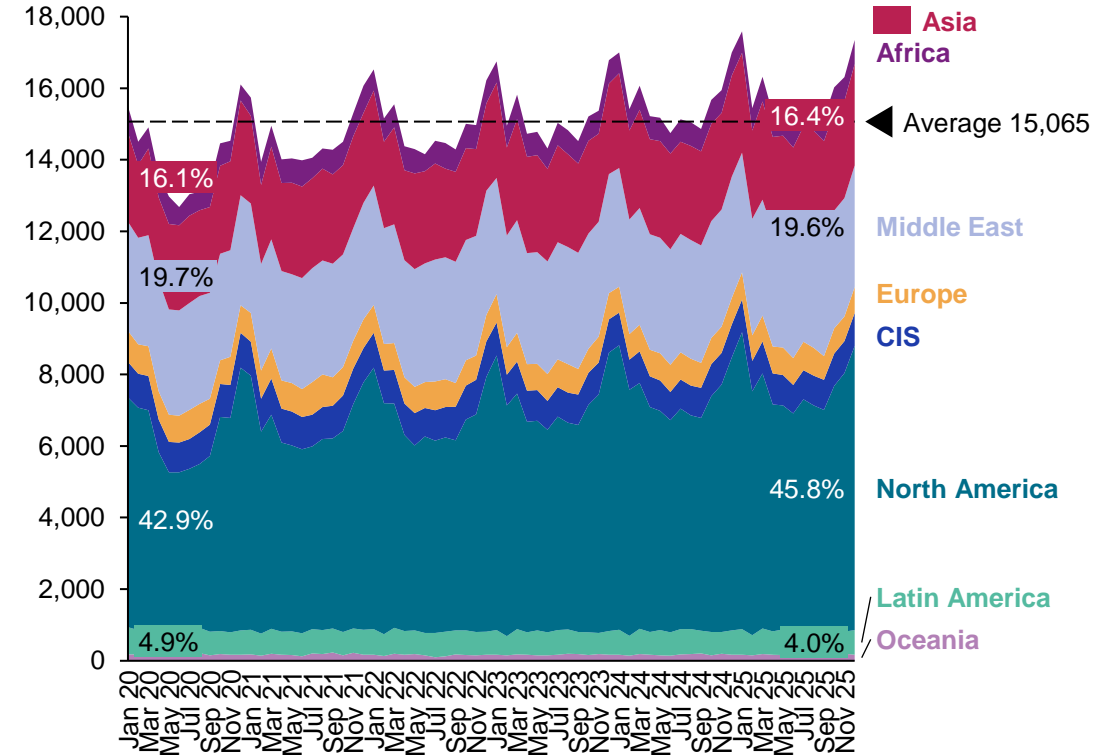
- **Market management (base case). OPEC+ manages supply to support prices and mainland China returns to growth.**
 - World oil demand rises 2.2 MMb/d in 2023, of which mainland China accounts for 1.3 MMb/d.
 - OPEC+ manages output to support \$80+/bbl oil.
 - Russian crude production shows resiliency, averaging 10.4 MMb/d in 2023, before dropping to 9.8 MMb/d in 2024 as sanctions bite.
 - US production grows 0.9 MMb/d in 2023 and 0.6 MMb/d in 2024.
 - After being in surplus in first half 2023, world oil supply turns to deficit in the rest of 2023.
- **Falling oil supply. Up to 2 MMb/d of Russian oil exports are lost. Spare capacity shrinks to 1 MMb/d or less.**
 - Russian output drops to 7–9 MMb/d as EU sanctions are enforced, and Russia continues to cut output.
 - Strategic and commercial inventories fall.
 - OPEC and other global producers are unresponsive to high prices.
- **Demand weakness.**
 - World demand growth is 1 MMb/d or less in 2023 as the COVID-19 outbreak depresses Chinese demand.
 - OPEC+ output cuts are insufficient.

Se espera que aumente la demanda total de propano, mientras que la oferta aumentará de manera similar.

**Global Propane Demand by Region
(Thousand Metric Tons)**



**Global Propane Supply by Region
(Thousand Metric Tons)**



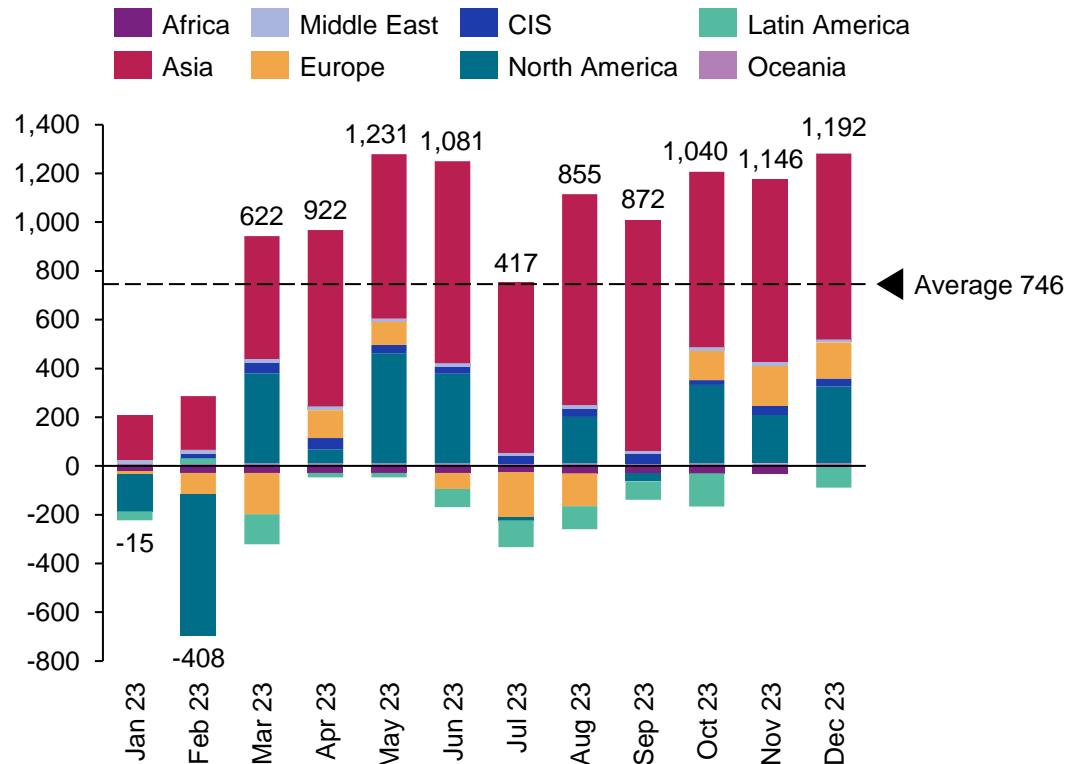
Data compiled Feb. 28, 2023.

Notes: Global demand/supply estimates based of monthly STO and ASW reports (May 2022). Global demand/supply balance based off prior month regional outlooks. Supply includes net storage withdrawals.

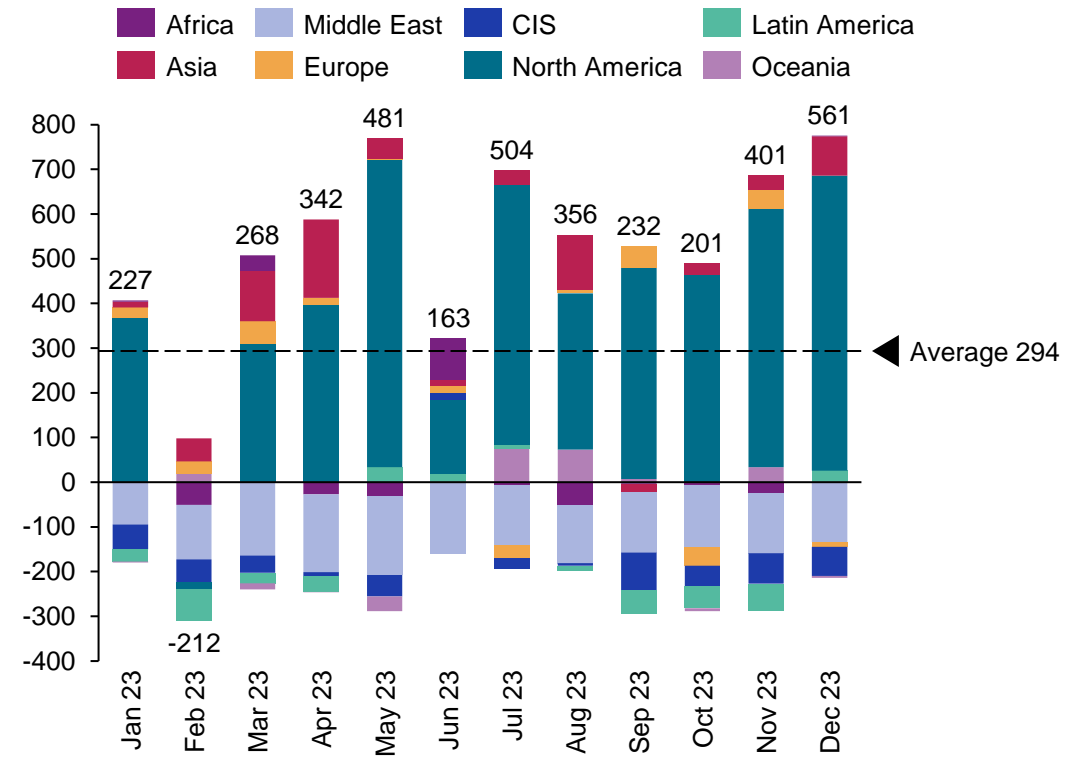
Source: S&P Global Commodity Insights

Se espera que la demanda de propano crezca en promedio en mercados clave durante el próximo año.

Year-over-Year Propane Demand Growth by Region (Thousand Metric Tons)



Year-over-Year Propane Supply Growth by Region (Thousand Metric Tons)



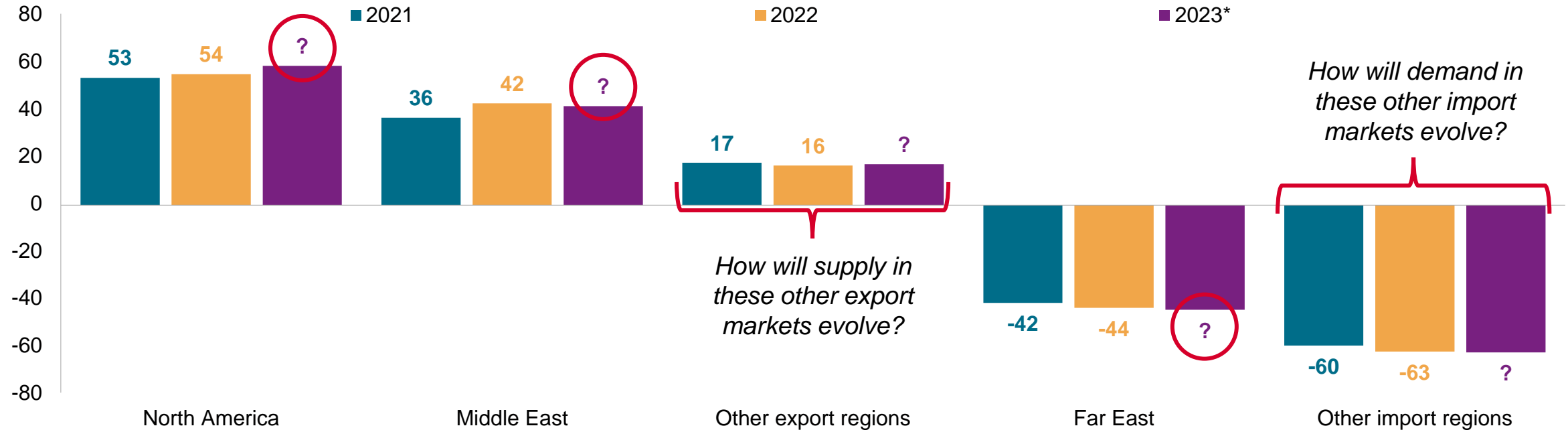
Data compiled Feb. 28, 2023.

Notes: Global demand/supply estimates based of monthly STO and ASW reports (May 2022). Global demand/supply balance based off prior month regional outlooks. Supply includes net storage withdrawals. Year-over-year calculation based on current year monthly figure minus previous year monthly figure.

Source: S&P Global Commodity Insights

¿Cómo cambiarán los flujos comerciales mundiales de GLP en los principales mercados de exportación e importación en 2023?

Global waterborne LPG trade (million metric tons)



• Will North America upstream and midstream investment be sufficient to meet increasing global waterborne LPG demand?

• Will OPEC+ production target cuts hamper Middle East LPG volumes available for export?

LPG is a globally traded commodity, with the United States and Middle East dominating supply growth and balancing between the evolving regional demand markets.

Data compiled January 2023.

*Illustrative 2023 waterborne import and export volumes. Other export regions include the Mediterranean, North Sea, and West Africa. Other import regions include India, Southeast Asia, Northwestern Europe, Latin American and the Mediterranean.

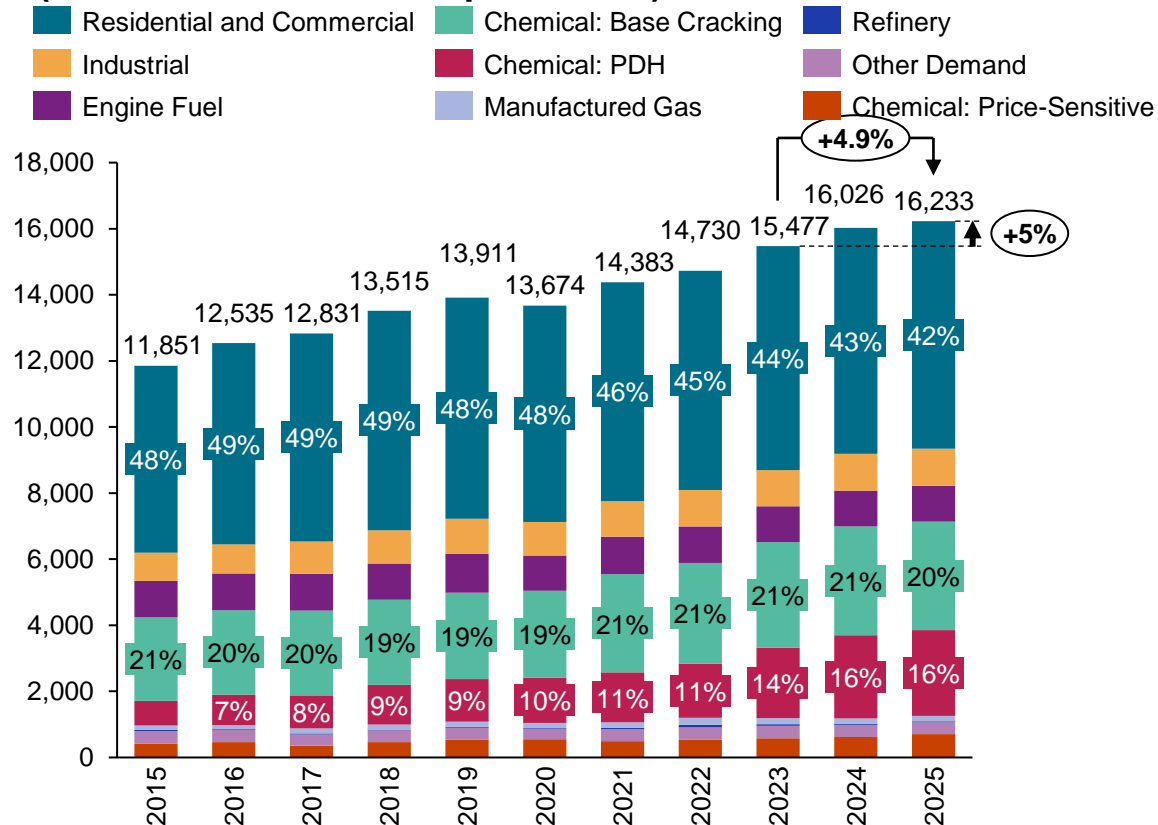
Source: S&P Global Commodity Insights.



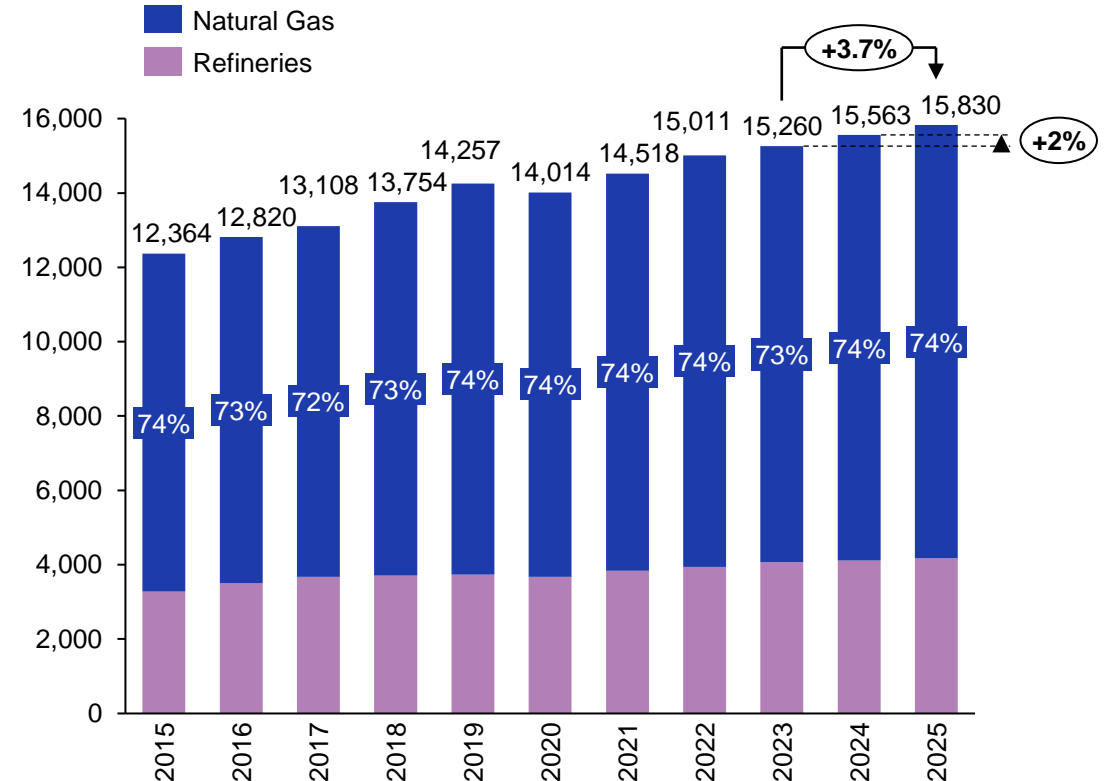
SOURCE : Waterborne LPG Live

La demanda residencial y comercial es una fuente clave de demanda global; Se espera que la demanda petroquímica y PDH aumente en las perspectivas

Global Propane Demand by Source (Thousand Metric Tons per month)



Global Propane Supply by Source (Thousand Metric Tons per month)



Data compiled Feb. 28, 2023.

Notes: Global demand/supply estimates based of monthly STO and ASW reports (May 2022). Global demand/supply balance based off prior month regional outlooks. Supply includes net storage withdrawals.

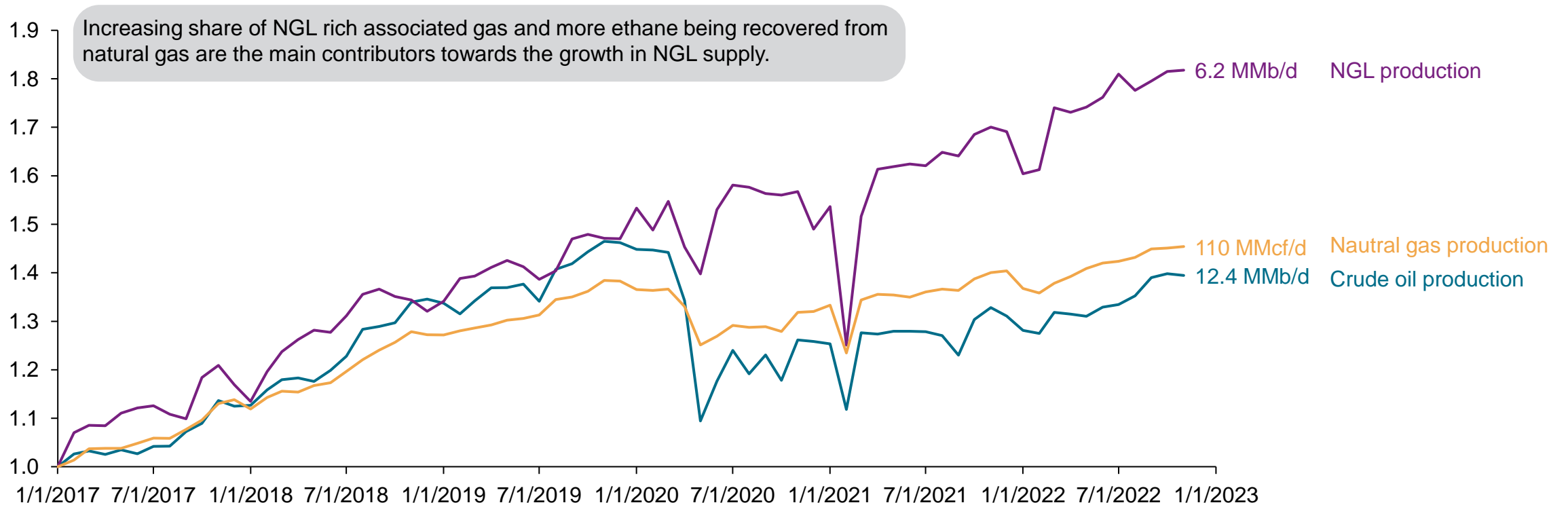
Source: S&P Global Commodity Insights

North American Supply



El crecimiento de la producción de LGN en EUA ha sido notable en comparación con el petróleo y el gas: una mayor proporción de gas a petróleo produce más LGN por barril de producción de crudo.

US crude oil, natural gas and NGL growth index



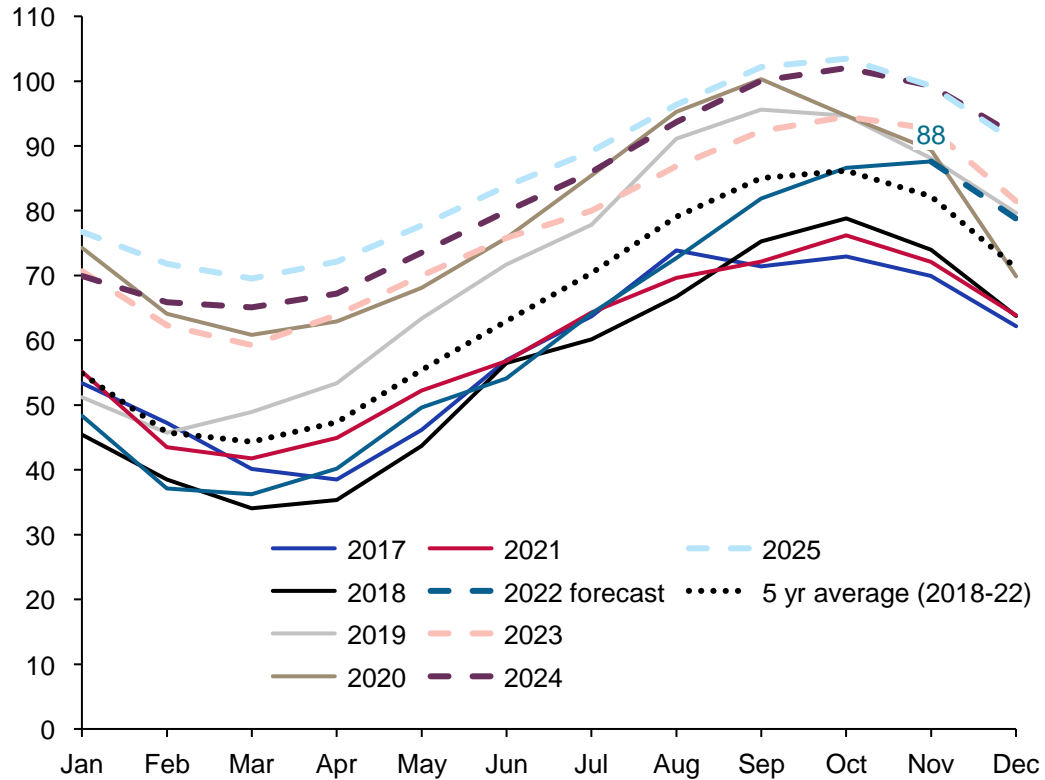
Data compiled Feb. 28, 2023.

Marketed natural gas is shown for gas production. NGL data only represents natural gas based and refinery NGLs are not included.

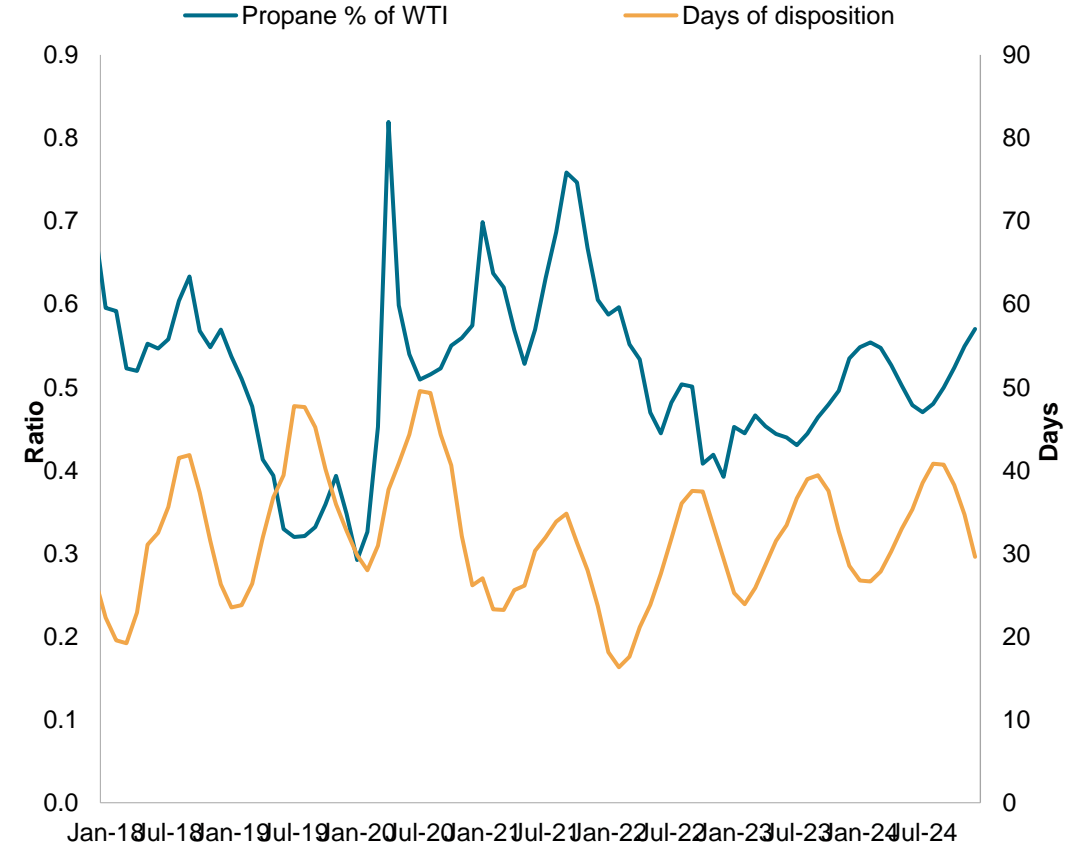
Source: S&P Global Commodity Insights.

Inventario de propano por encima del promedio de 5 años

US propane inventory (MMbbl)



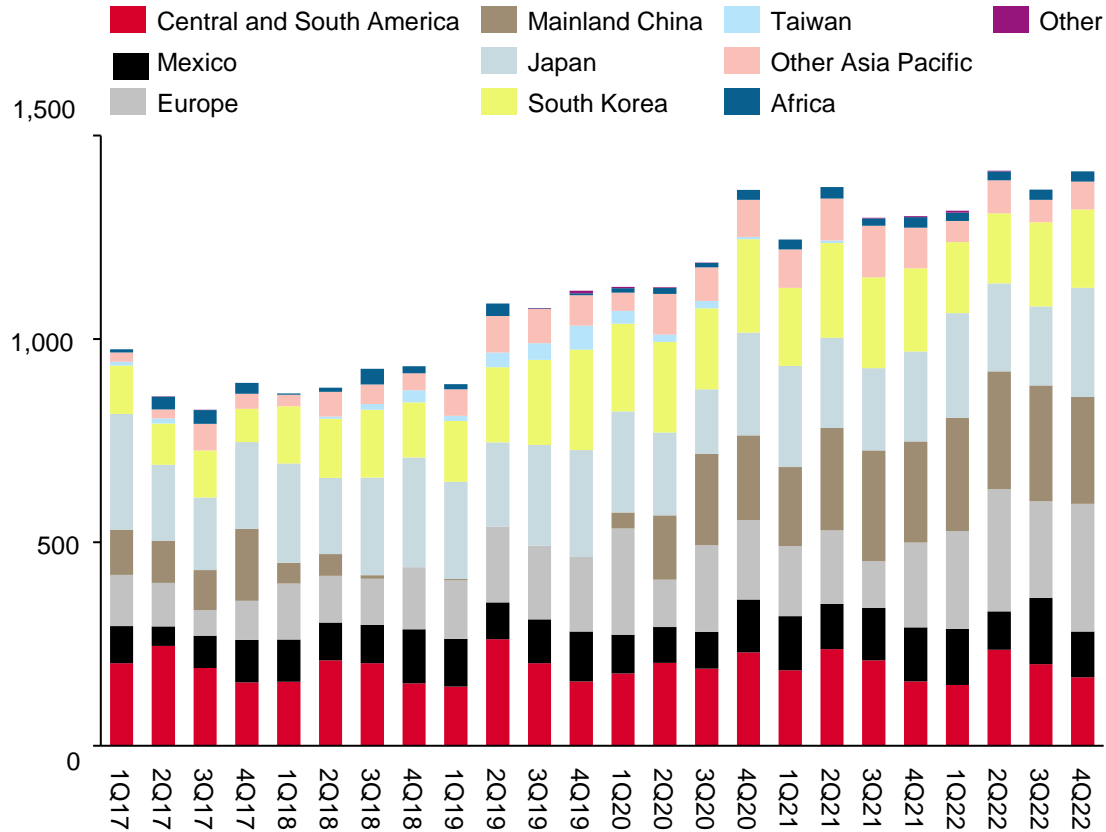
Propane ratio to WTI against days of disposition



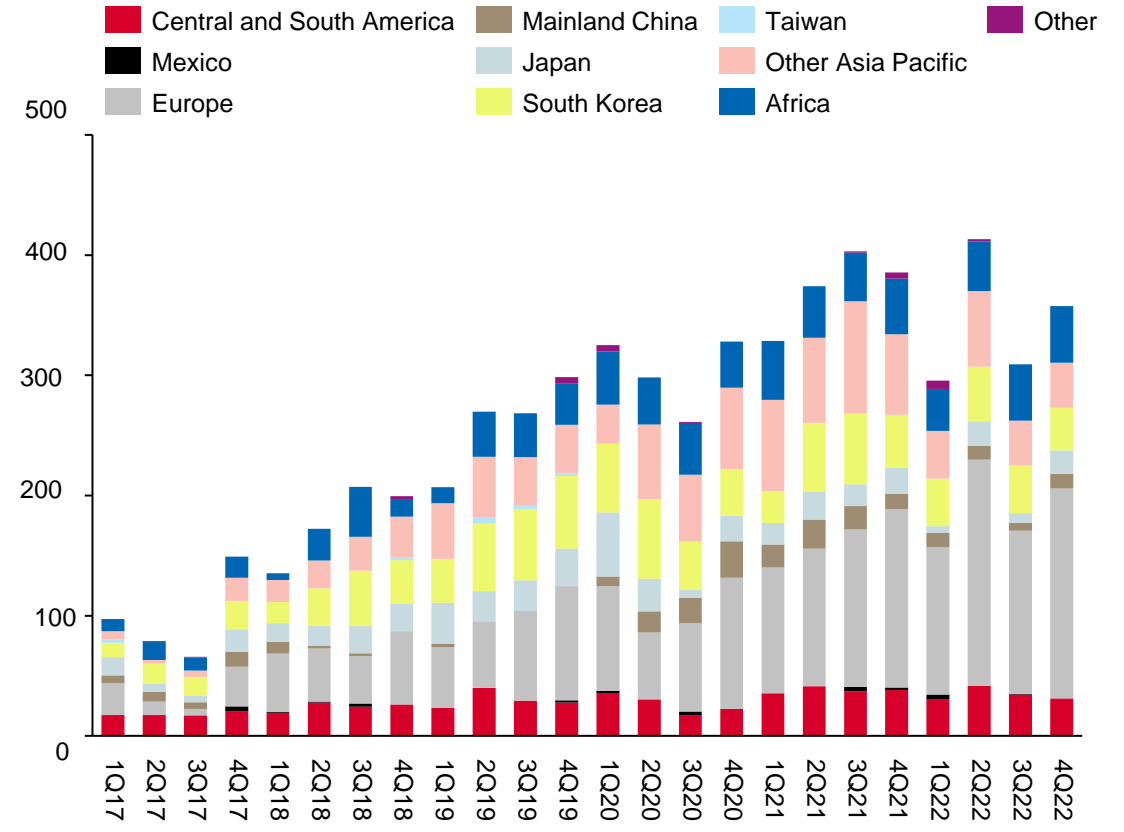
Data compiled Feb. 28, 2023.
 Dashed line indicates forecast.
 Source: S&P Global Commodity Insights.

Se espera que las exportaciones de GLP de EE. UU. aumenten en 2023 con una demanda creciente de China continental y un crecimiento limitado de la oferta de Oriente Medio

US waterborne propane exports (thousand b/d)



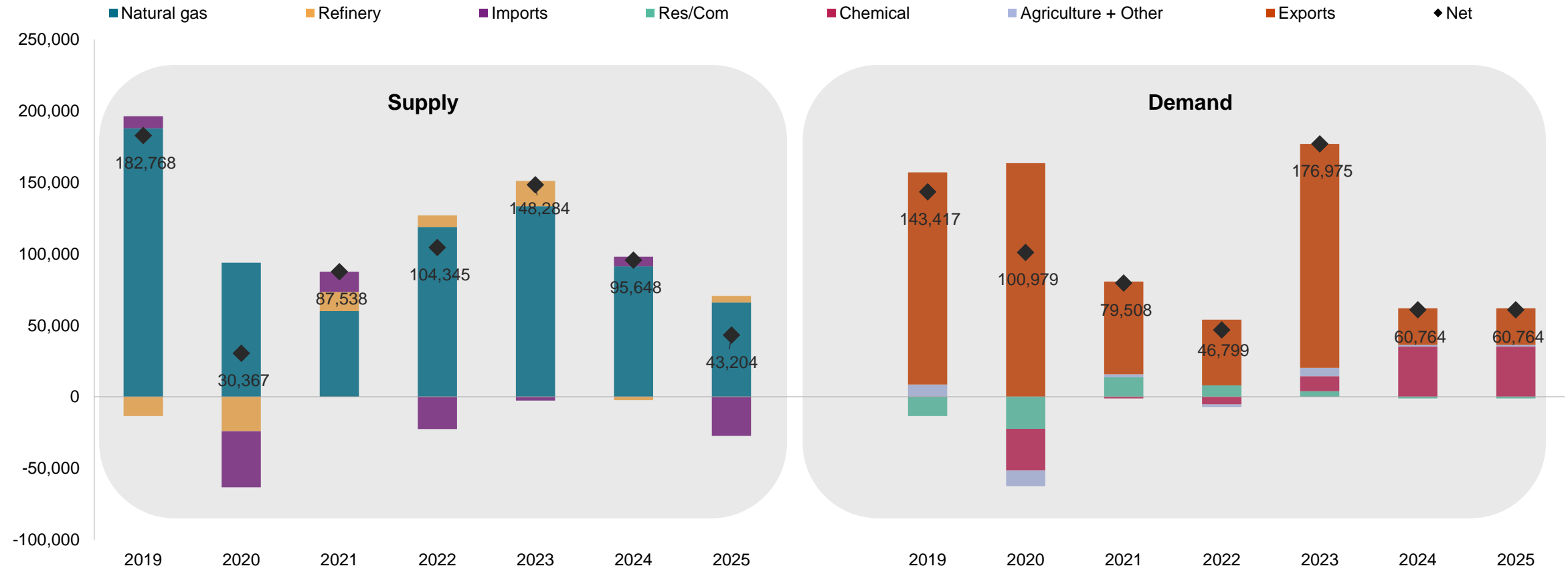
US waterborne normal butane exports (thousand b/d)



Data compiled Feb. 28, 2023.
 Dashed line indicates forecast.
 Source: S&P Global Commodity Insights.

Las necesidades de demanda petroquímica de China continental requerirán mayores exportaciones de propano de EE. UU.

US propane supply and demand year-over-year changes (b/d)

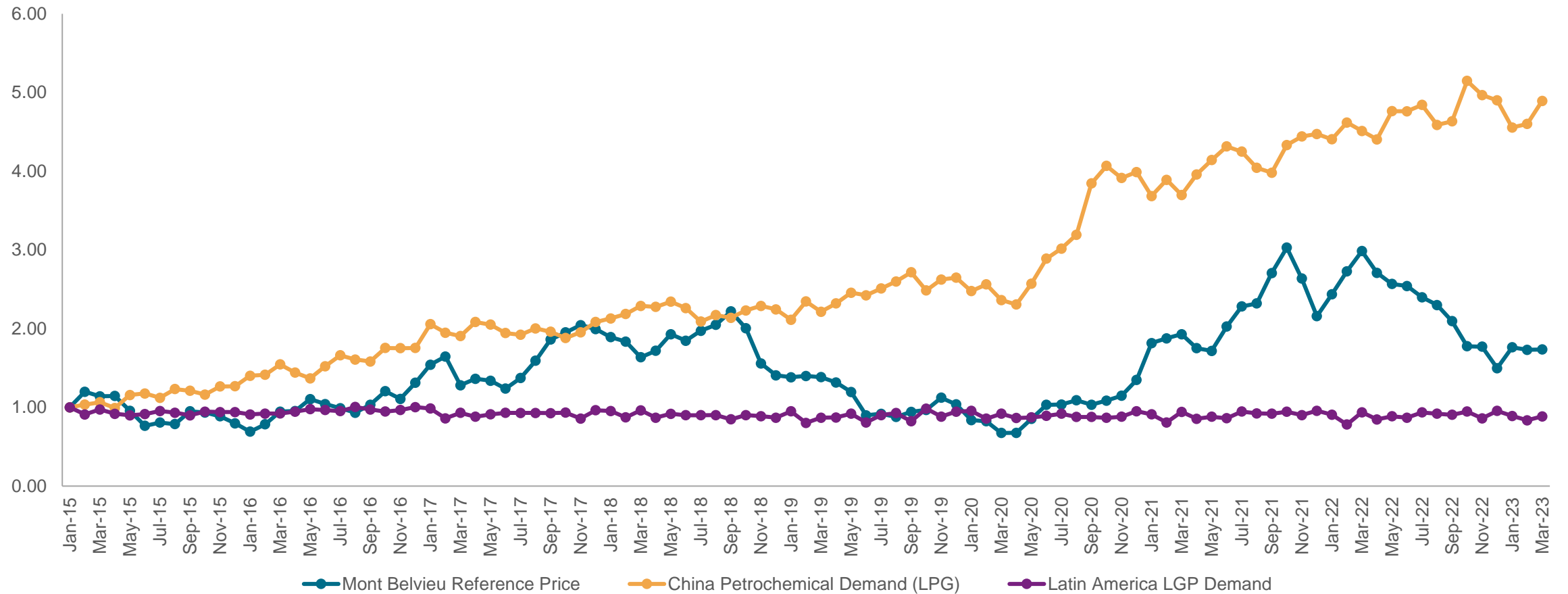


Data compiled Feb. 28, 2023.
Source: S&P Global Commodity Insights.

Asian Demand



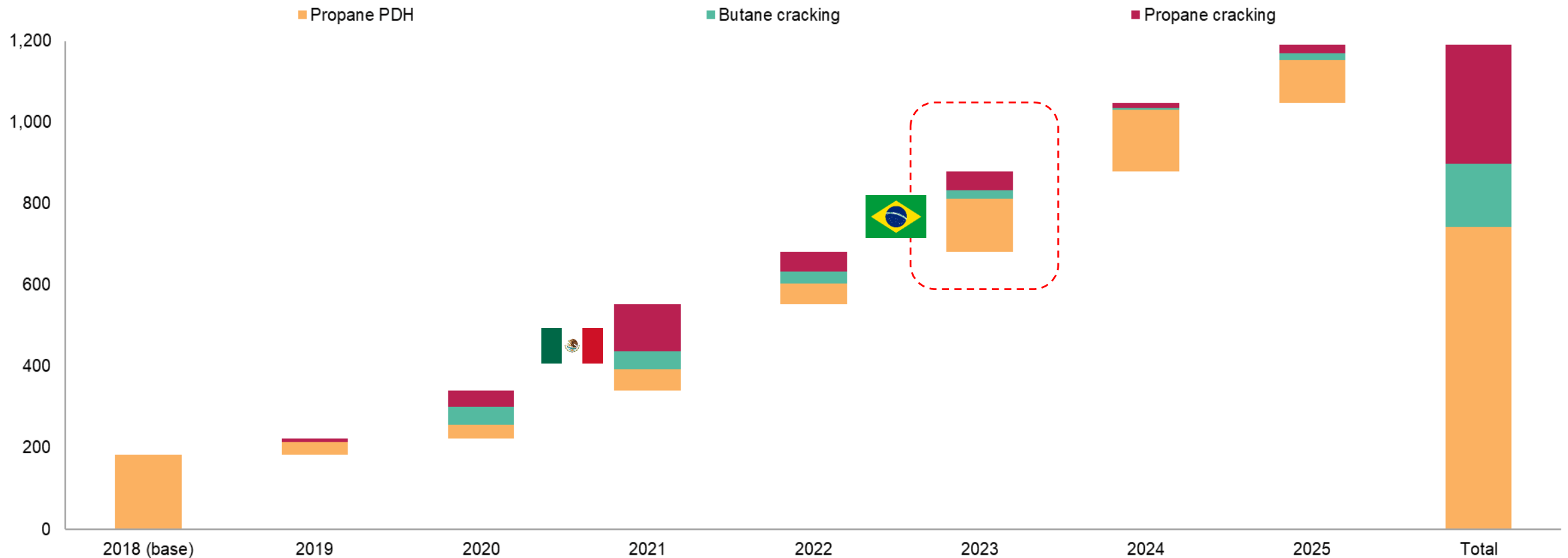
Demanda de América Latina vs Demanda Petroquímica asiática.



Year-on-year growth of Chinese petrochemical vs Latin America LPG Demand

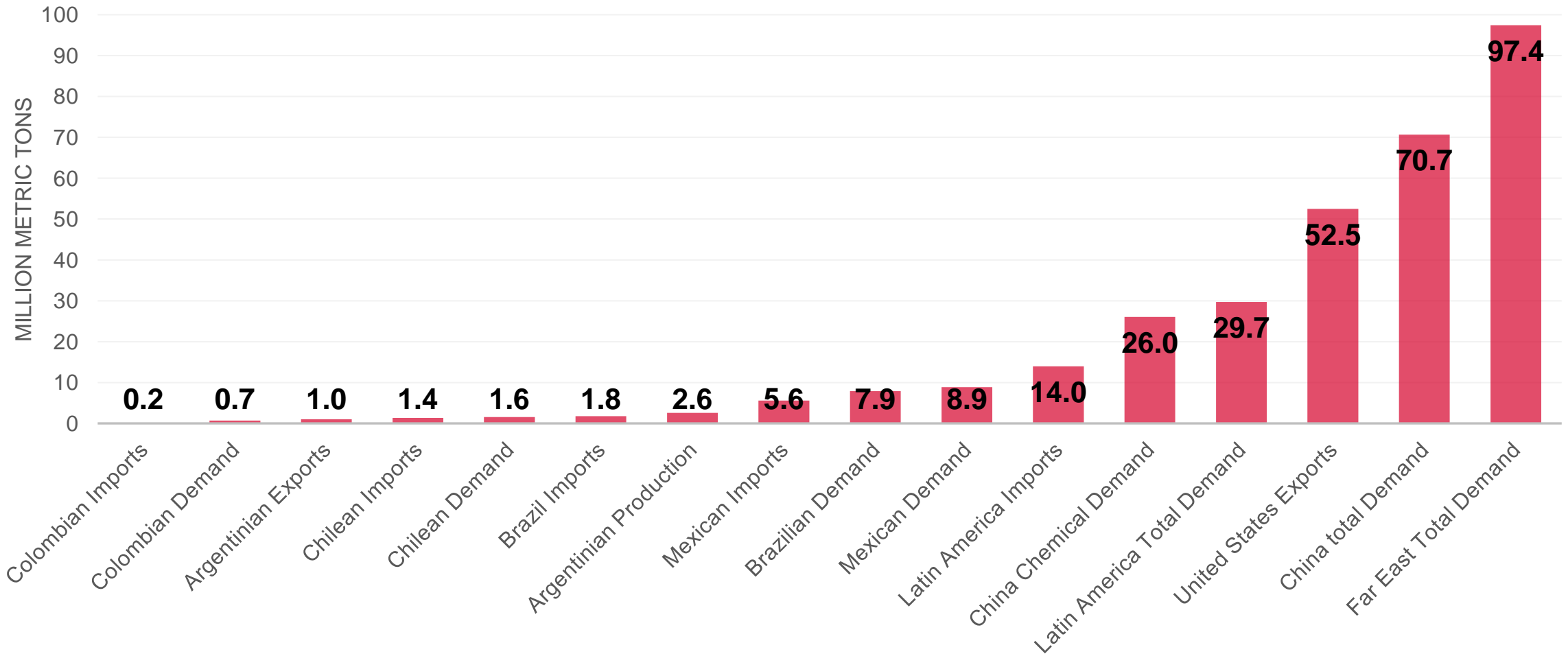
La demanda de GLP de China continental sigue siendo fuerte en 2023, sin embargo, el riesgo a la baja persiste debido a la desaceleración económica mundial y la continua debilidad en el sector petroquímico.

Year-over-Year growth of new olefins plants-driven LPG demand in mainland China (Barrels per day)

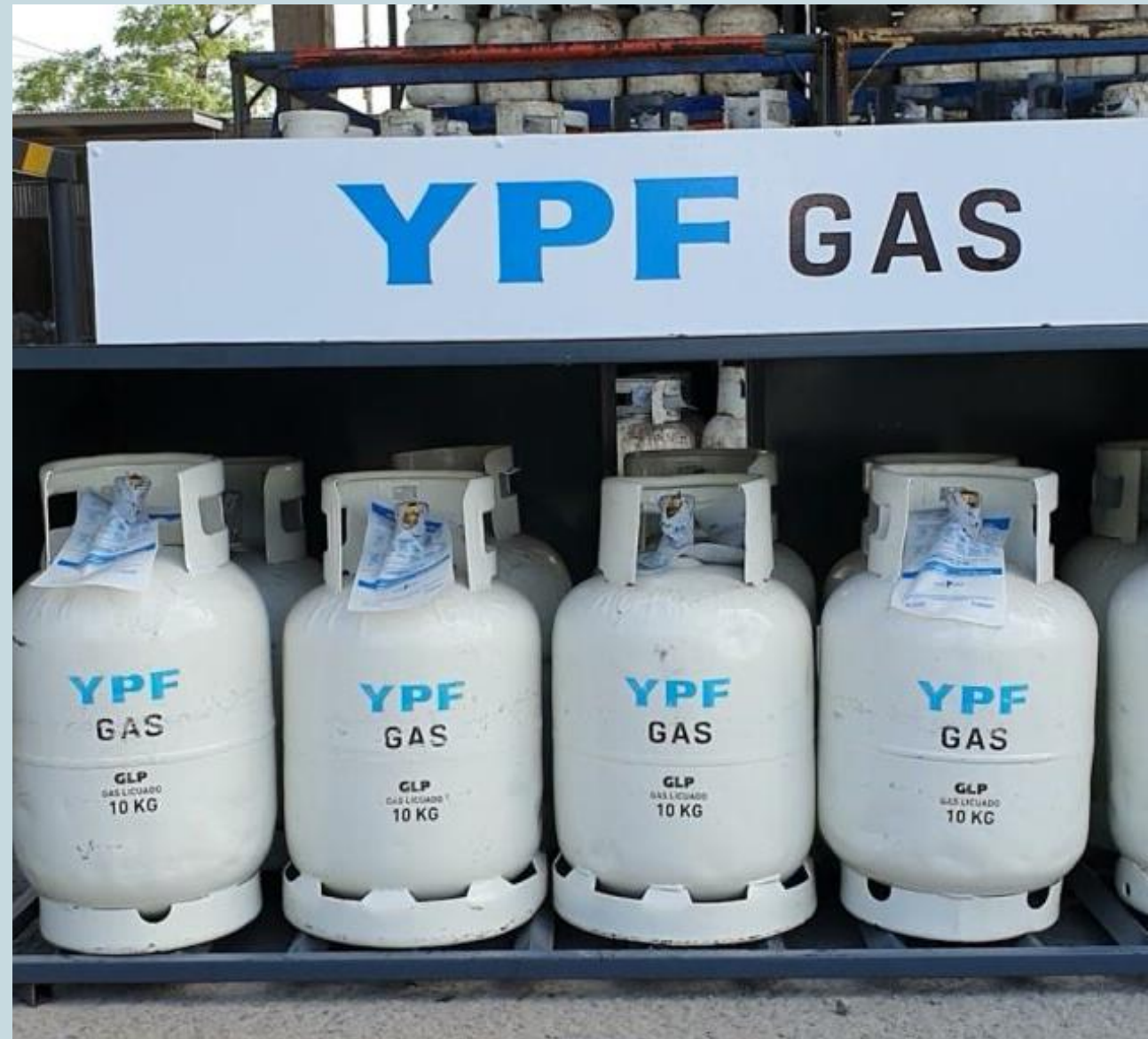


Data compiled Feb. 28, 2023.
Source: S&P Global Commodity Insights.

Demanda de América Latina vs Demanda Petroquímica asiática.

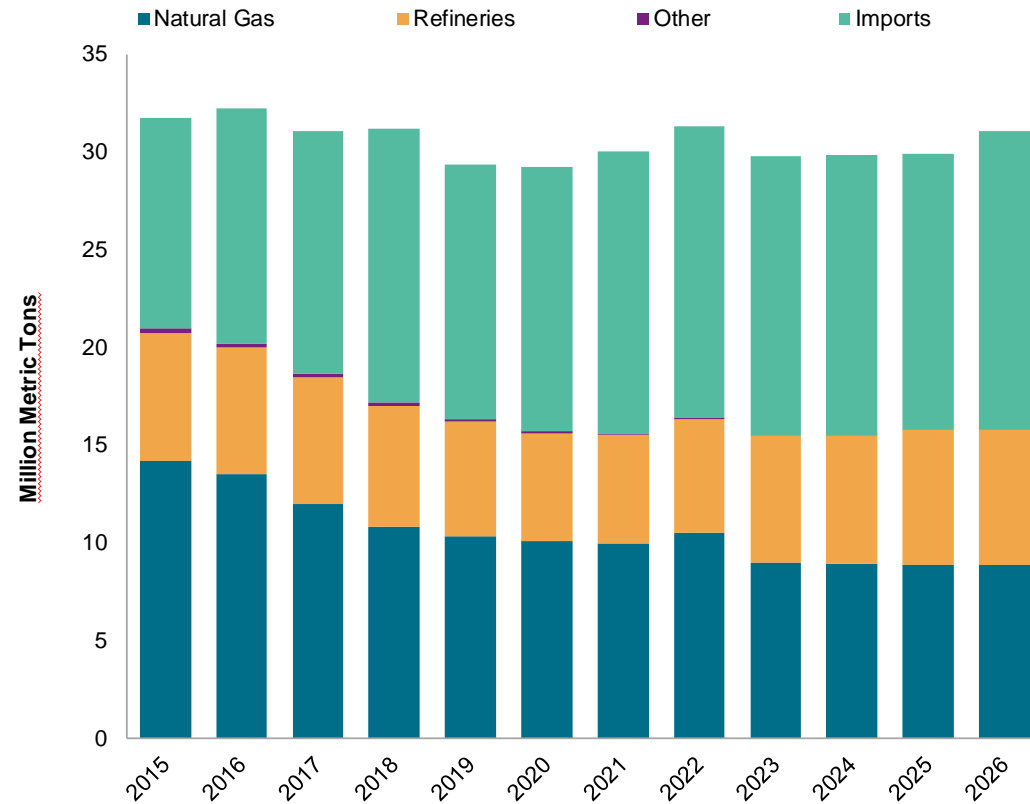


Latin America



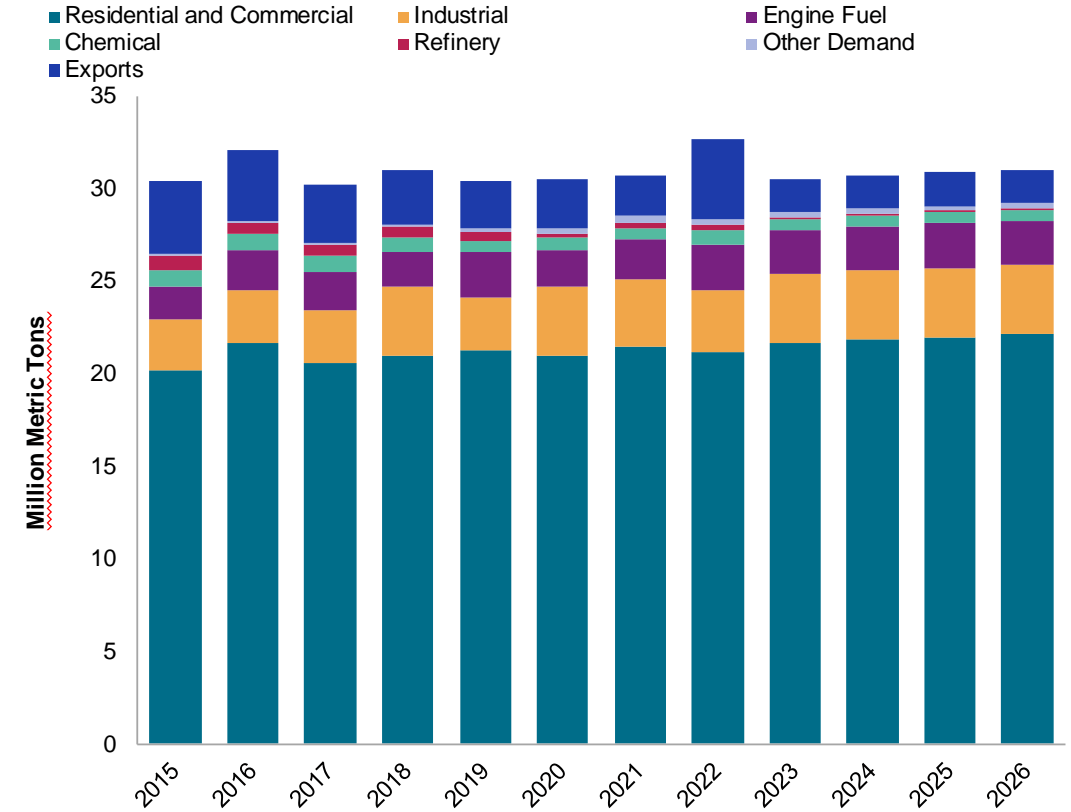
Latinoamerica: Balance del mercado

Latin America LPG Supply



Source: S&P Global Commodity Insights, formerly IHS Markit
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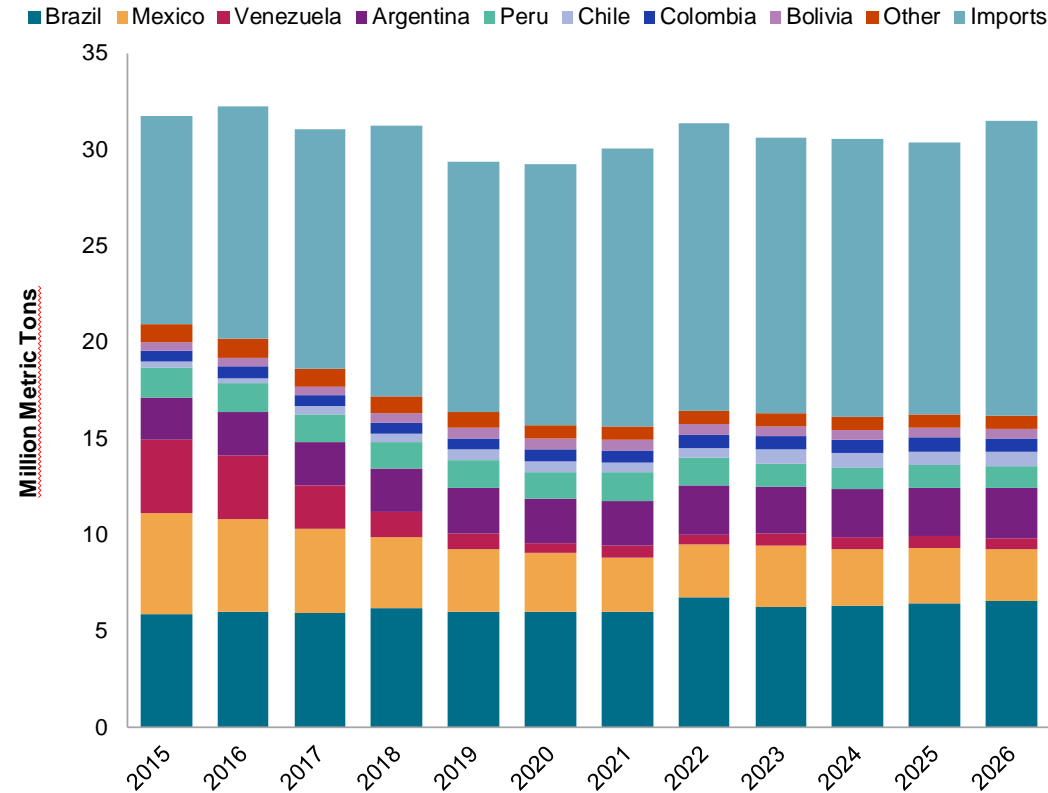
Latin America LPG Demand



Source: S&P Global Commodity Insights, formerly IHS Markit
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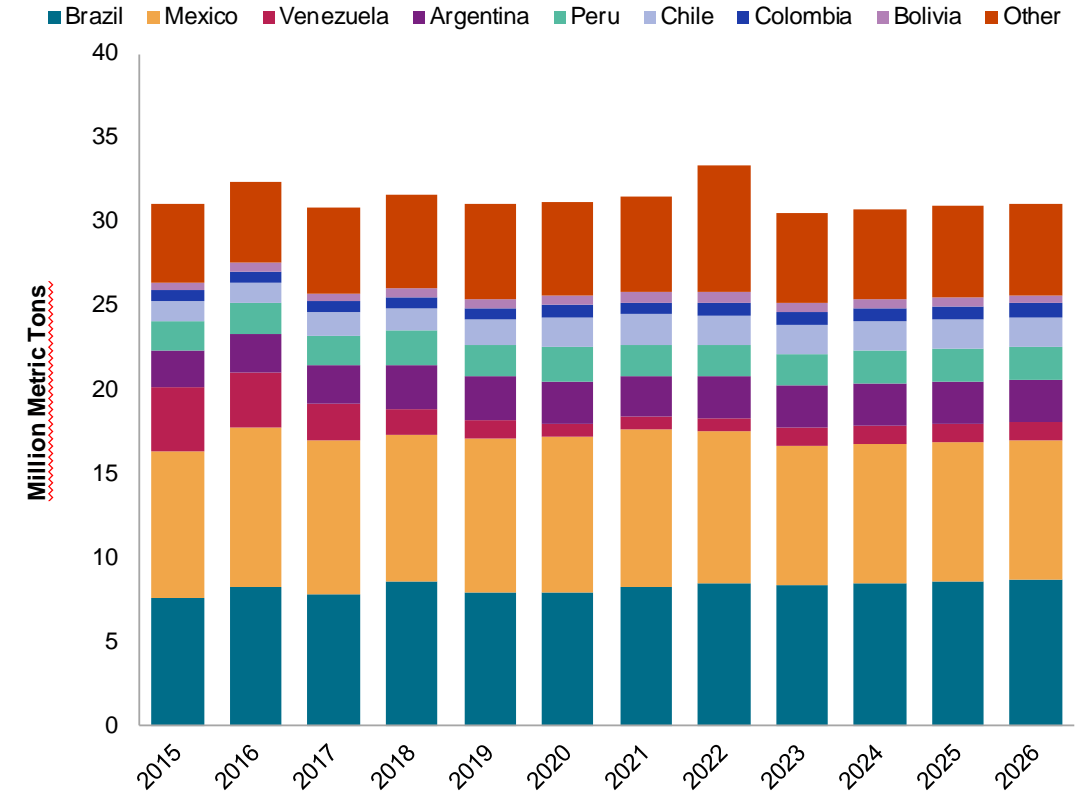
Latin America: LPG Market Overview

Latin America LPG Supply



Source: S&P Global Commodity Insights, formerly IHS Markit
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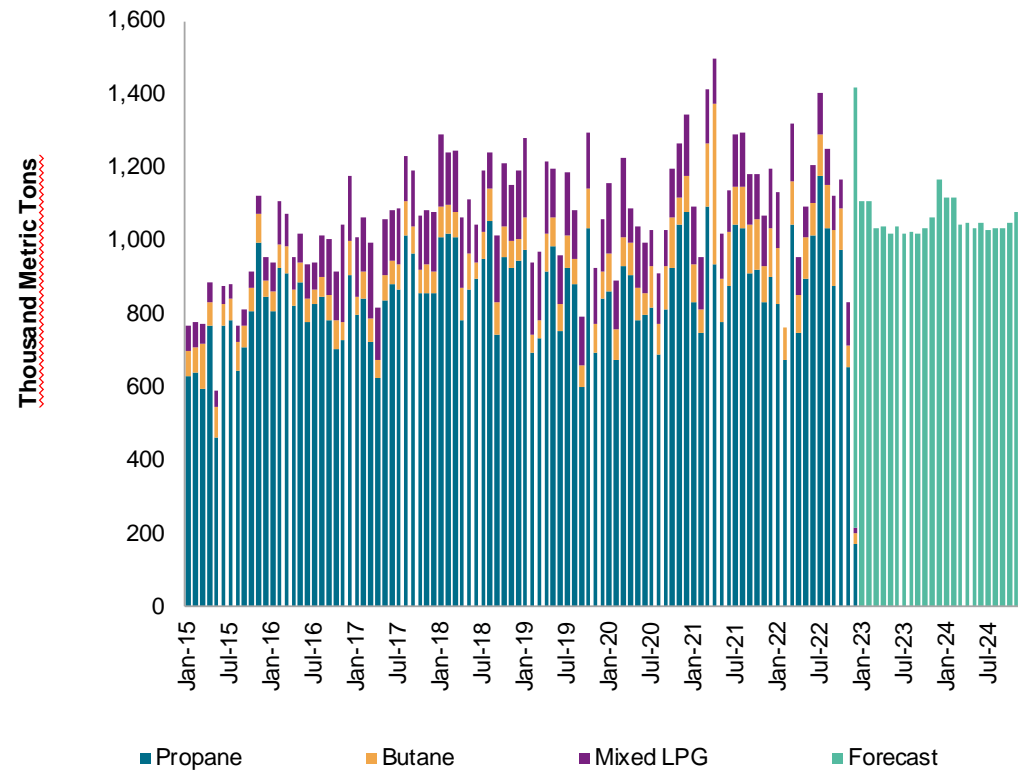
Latin America LPG Demand by Country



Source: S&P Global Commodity Insights, formerly IHS Markit
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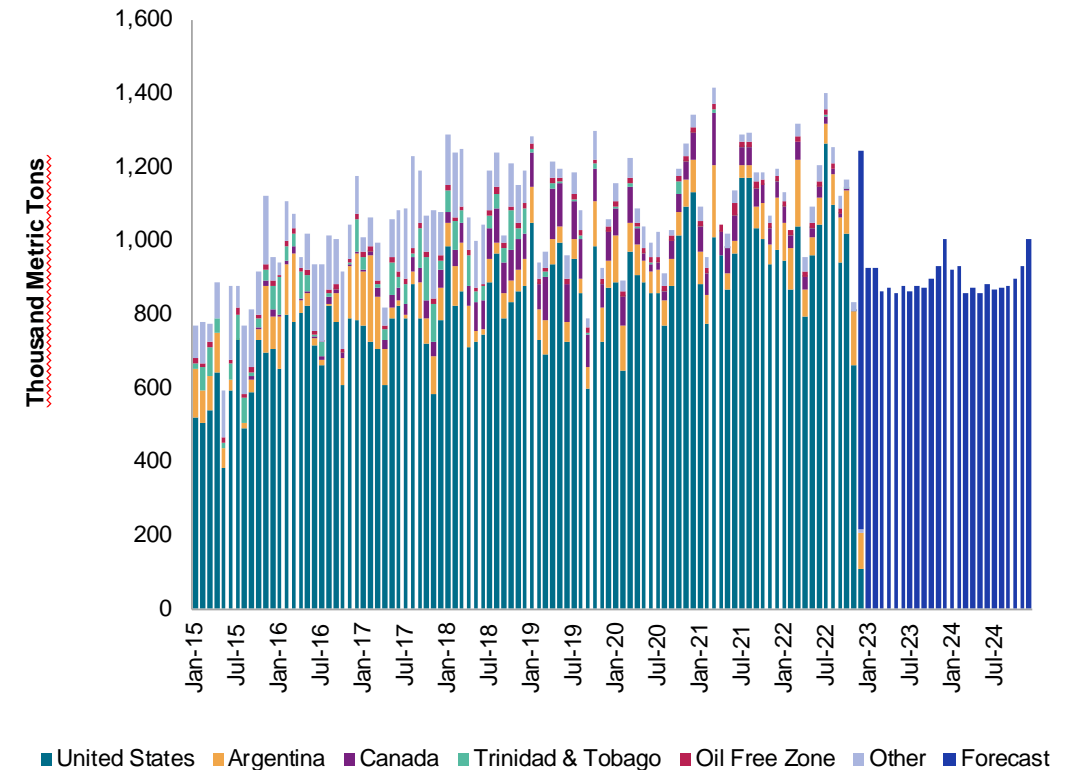
Latinoamerica: Balance del mercado

Latin America LPG imports by product



Source: S&P Global Commodity Insights, formerly IHS Markit
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Latin America LPG imports by source



Source: S&P Global Commodity Insights, formerly IHS Markit
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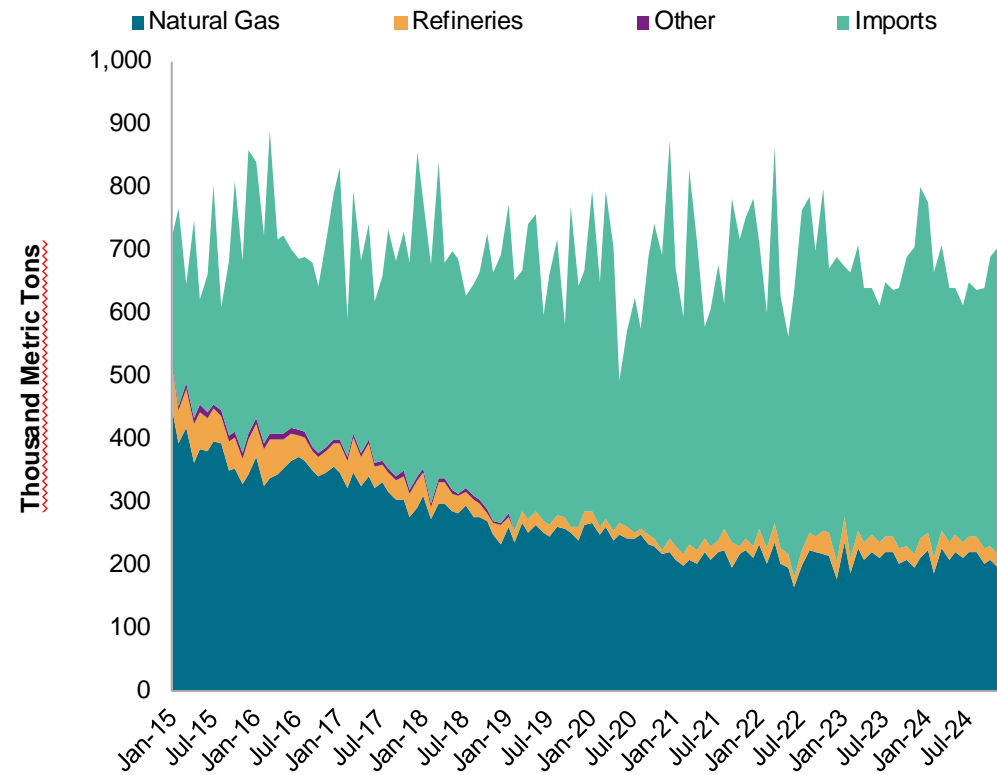
Mexico



Mexico: Balance del mercado

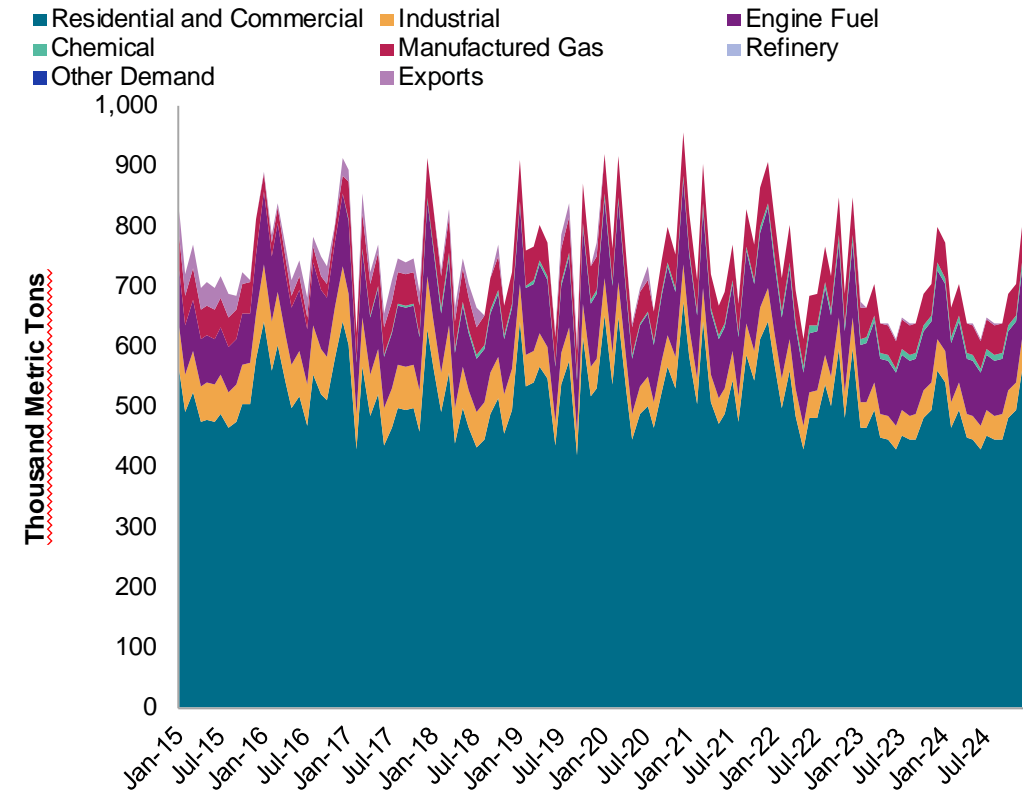


Mexico LPG Supply



Source: S&P Global Commodity Insights, formerly IHS Markit
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Mexico LPG Demand

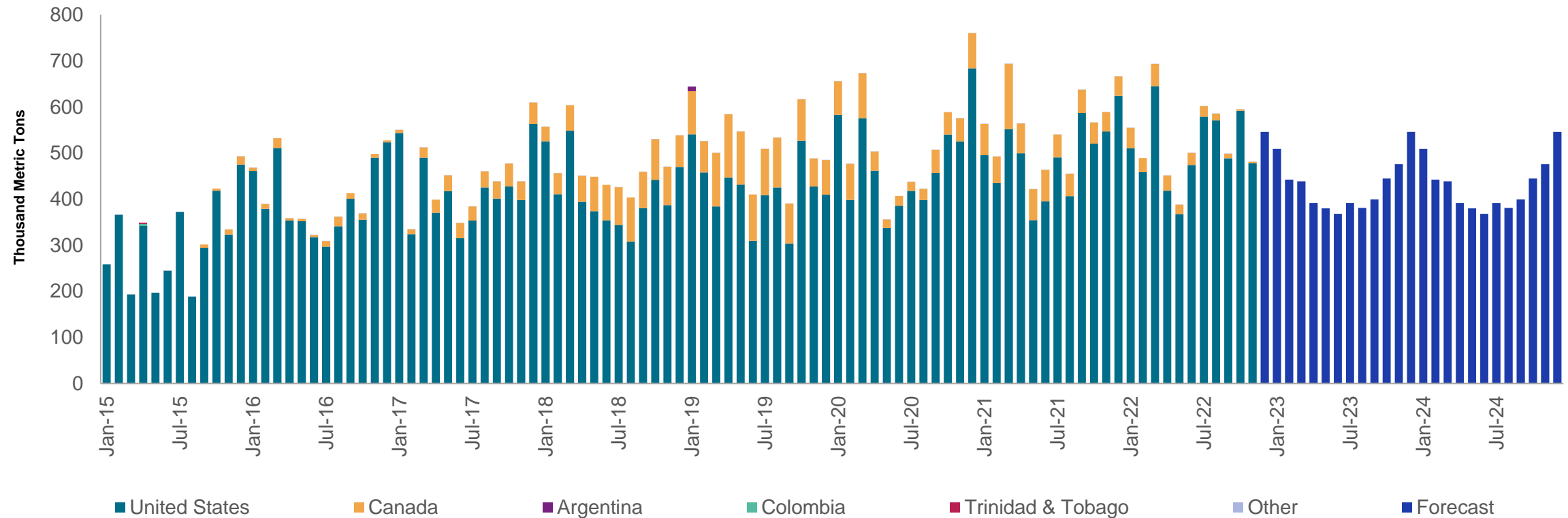


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Mexico: Balance del mercado



Mexico LPG imports by source



Source: S&P Global Commodity Insights, formerly IHS Markit

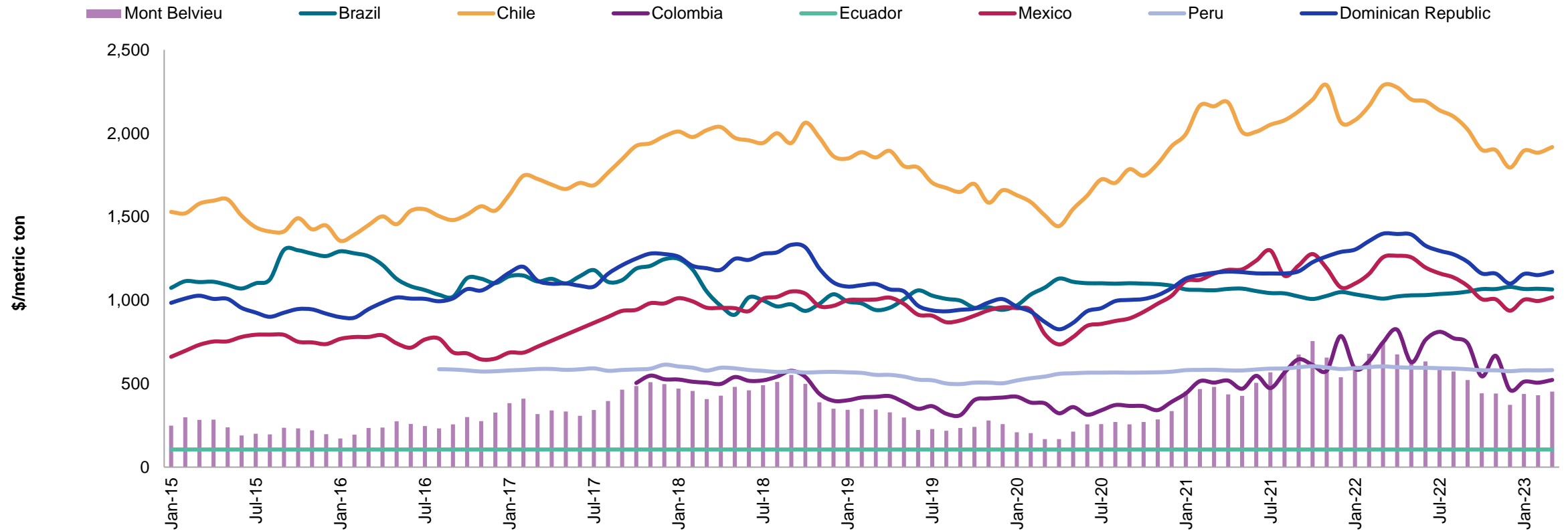
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Pricing

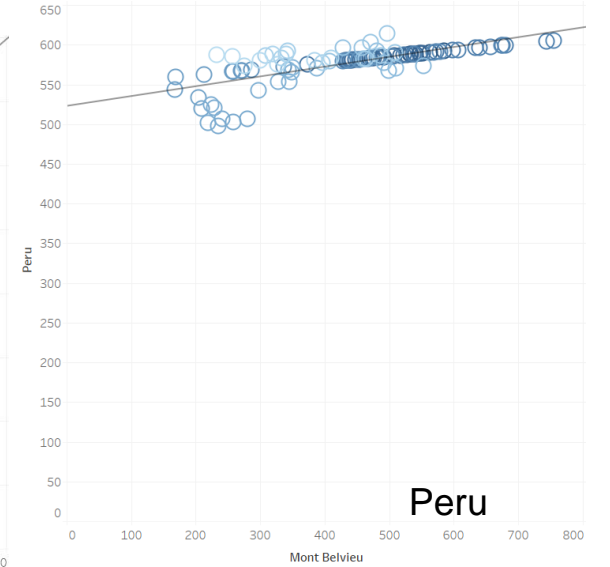
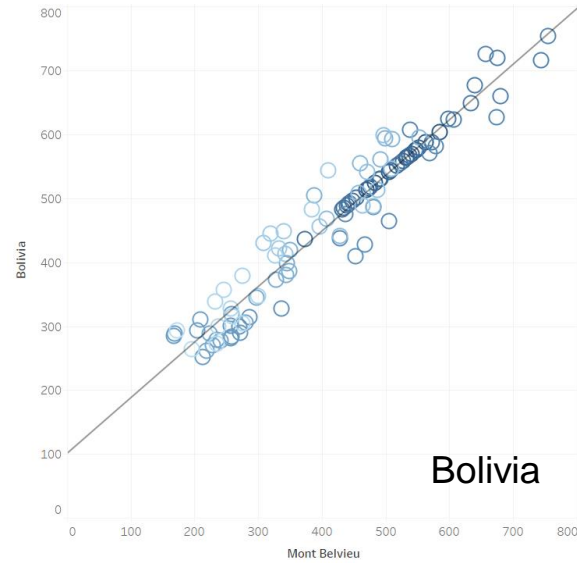
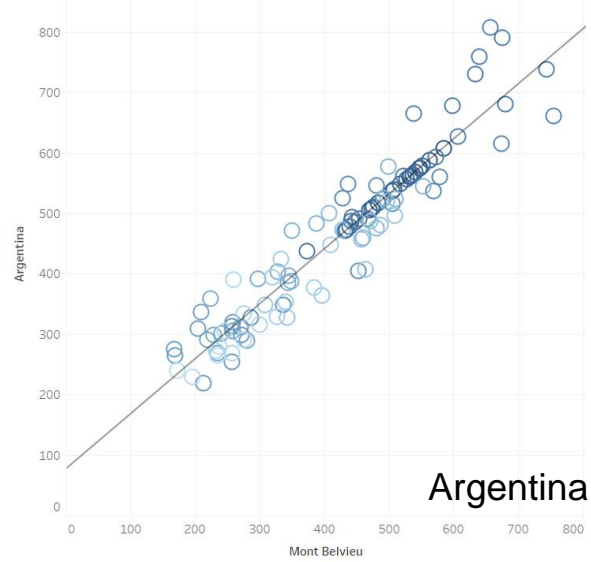
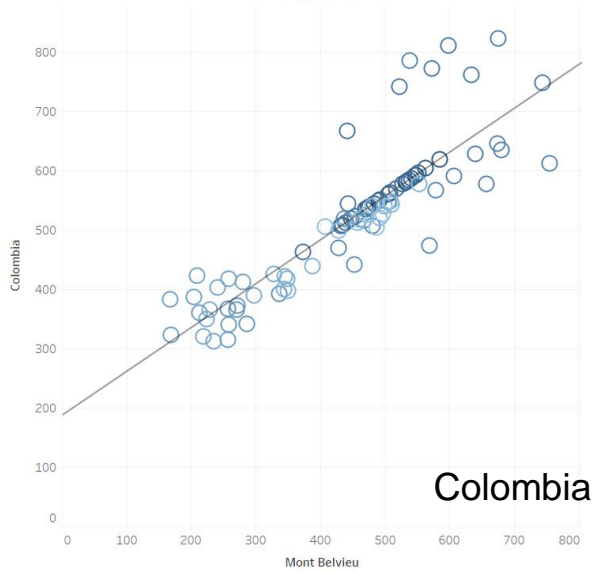
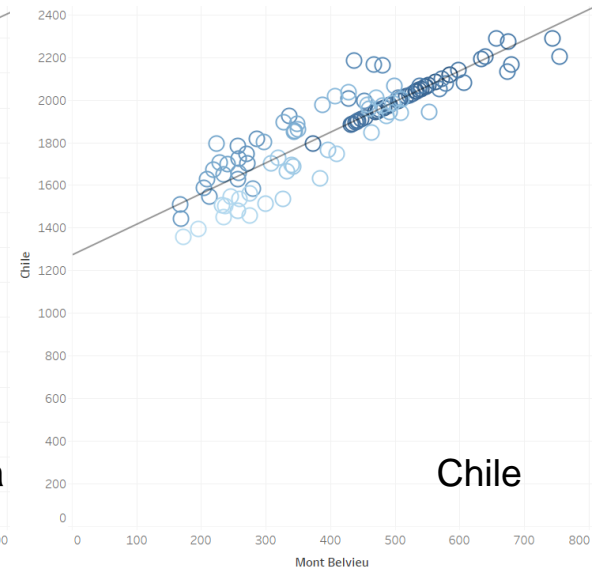
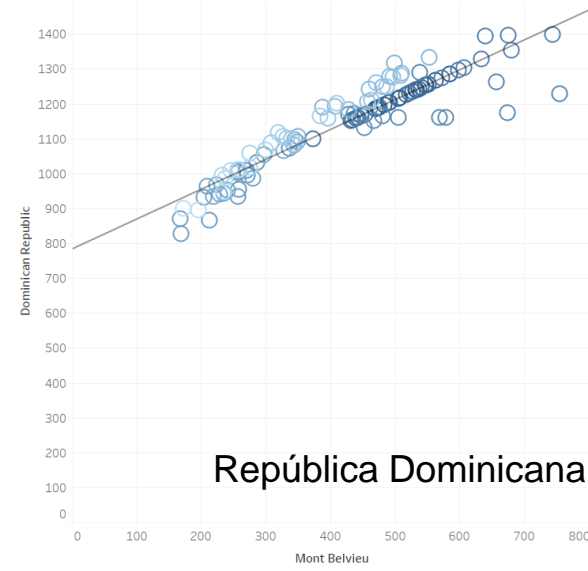
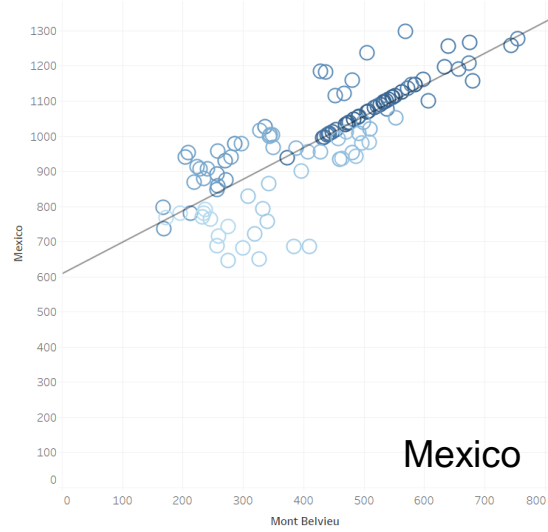
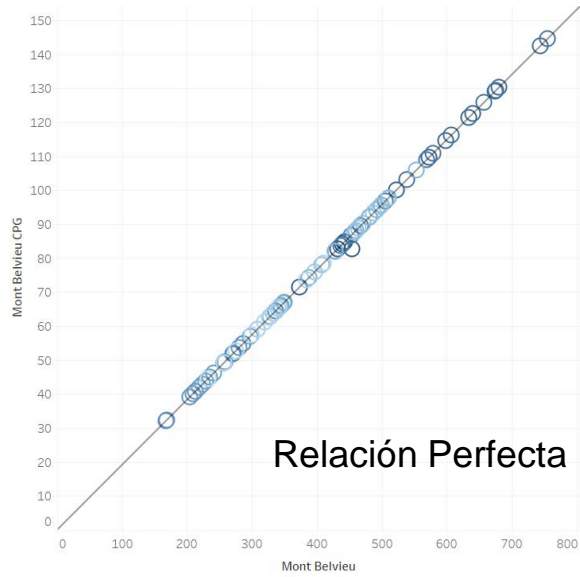


Precios de Gas LP en America Latina

Latin America local LPG prices by country



Source: S&P Global Commodity Insights, formerly IHS Markit
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Es probable que América Latina continúe con las intervenciones gubernamentales en el mercado debido a la presión de los precios mundiales del GLP y un aumento en la demanda de leña.

- El impacto de los precios elevados del GLP en la inflación aumenta las posibilidades de regulación por parte de los gobiernos de izquierda








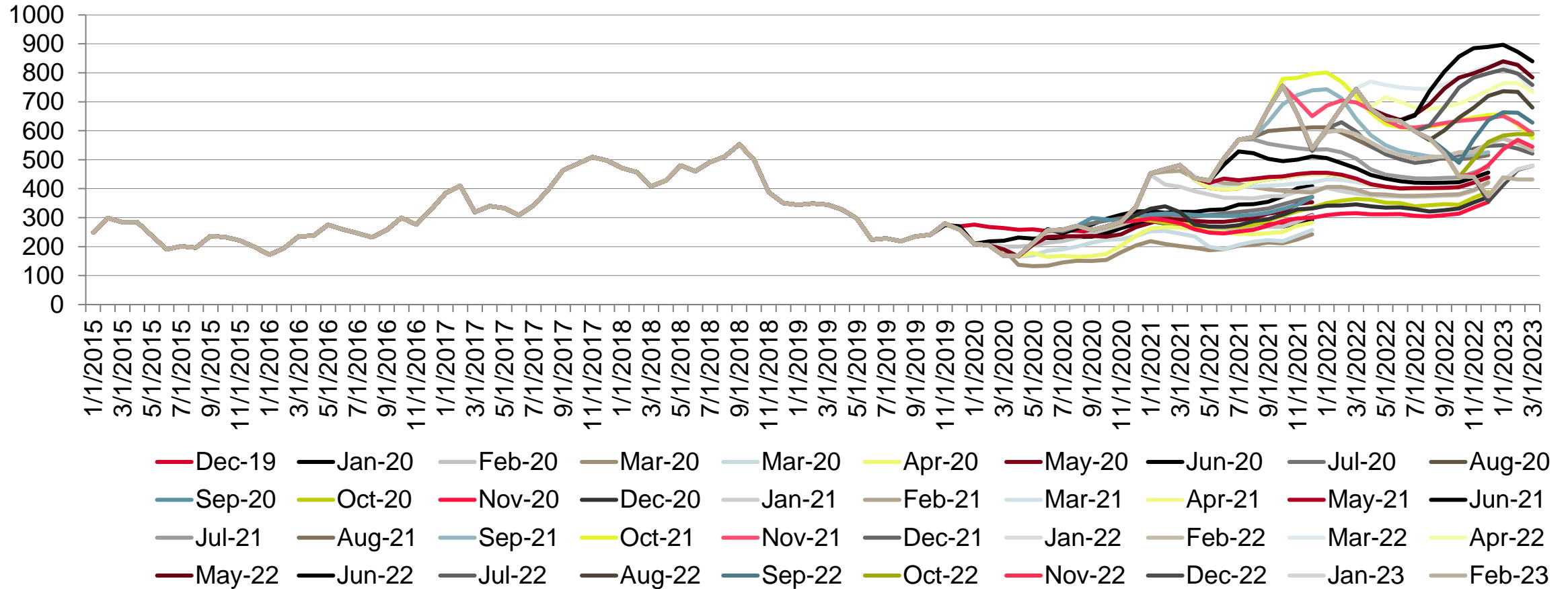
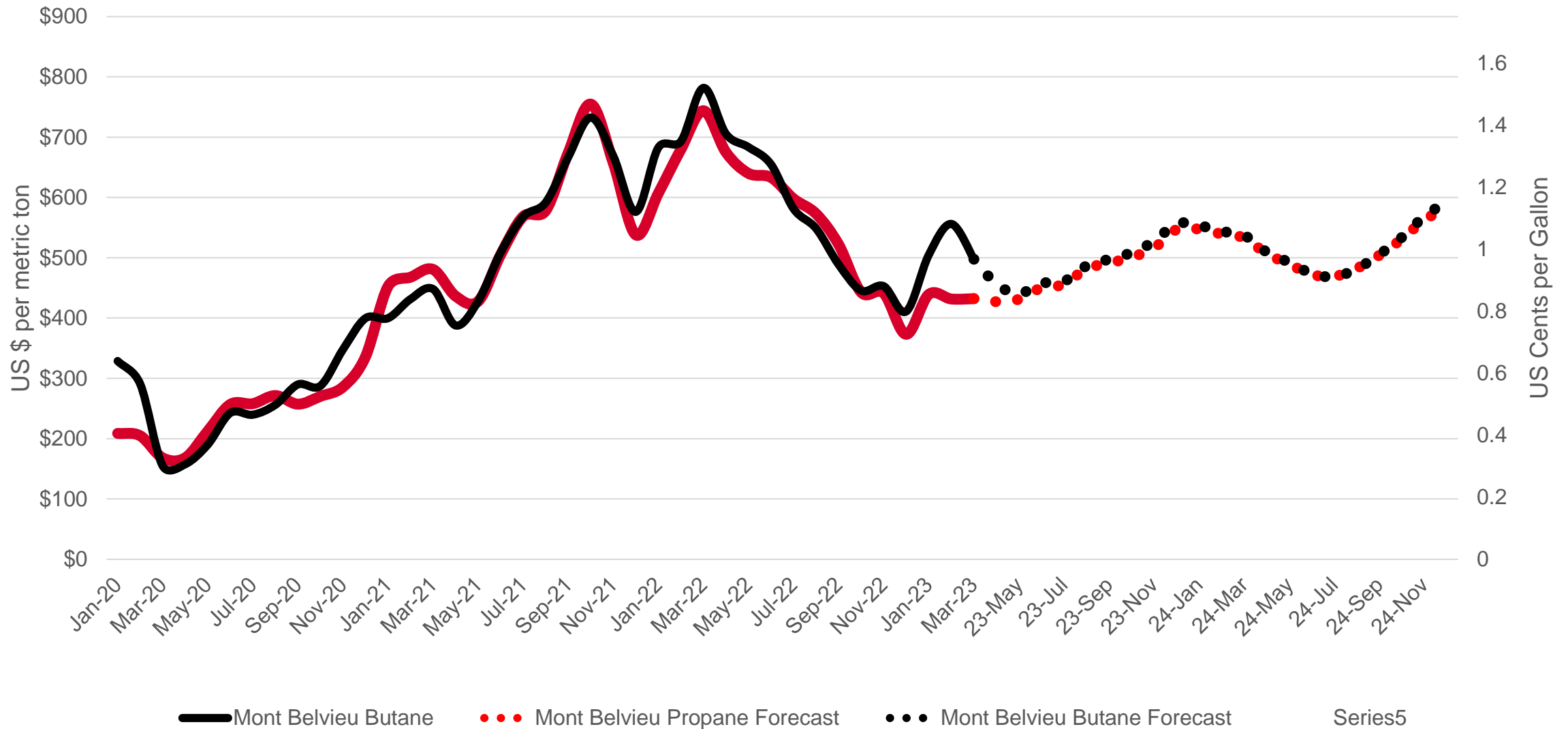
Mexico	Chile	Brazil	Colombia	Argentina	Bolivia	Others
						
<ul style="list-style-type: none">• Pemex's LPG distributor "Gas Bienestar" began operations locally with mixed results• Retail price cap restrictions extended indefinitely• Up to 10% of the demand is served by the black market.• Private investment at a standstill.	<ul style="list-style-type: none">• Government backed LPG distribution company "Gas de Chile" began operations• Congressional proposal of limiting the participation of LPG distributors at the retail level paused.	<p>Global prices have a direct impact on retail prices in Brazil.</p> <p>Local LPG distributors are committed to finding international suppliers some have opted for the construction of their own port terminal for the importation of LPG.</p>	<ul style="list-style-type: none">• Ecopetrol ended discount for locally produced LPG• Demand contraction due to high prices. Transition of these consumers to firewood likely.• Government to implement focalized subsidy to low-income consumers.	<ul style="list-style-type: none">• Production growth in Vaca Muerta is generating new LPG production peaks. With local demand somewhat steady, this new production will need to be find a place in the global market.• The new availability of product has led to an 8% increase butane sales packaged in 10-kilo cylinders.	<p>Bolivia has consolidated itself as the largest supplier of butane and propane to the Paraguayan market. Bolivia continues to benefit greatly from high LPG prices.</p>	<ul style="list-style-type: none">• Latin America, continues to be firewood. 34% of the population still consume firewood or biomass for daily cooking in their homes.• Countries like Colombia saw a sudden raise on the usage of firewood directly related to high global prices

Image Sources: Petrobras, Pemex, ENAP, UPME, YPF Gas, YPFB, & CrossCatholic

Elaboración del pronóstico del precio



Pronostico de precios para los siguientes meses:



Reflexiones



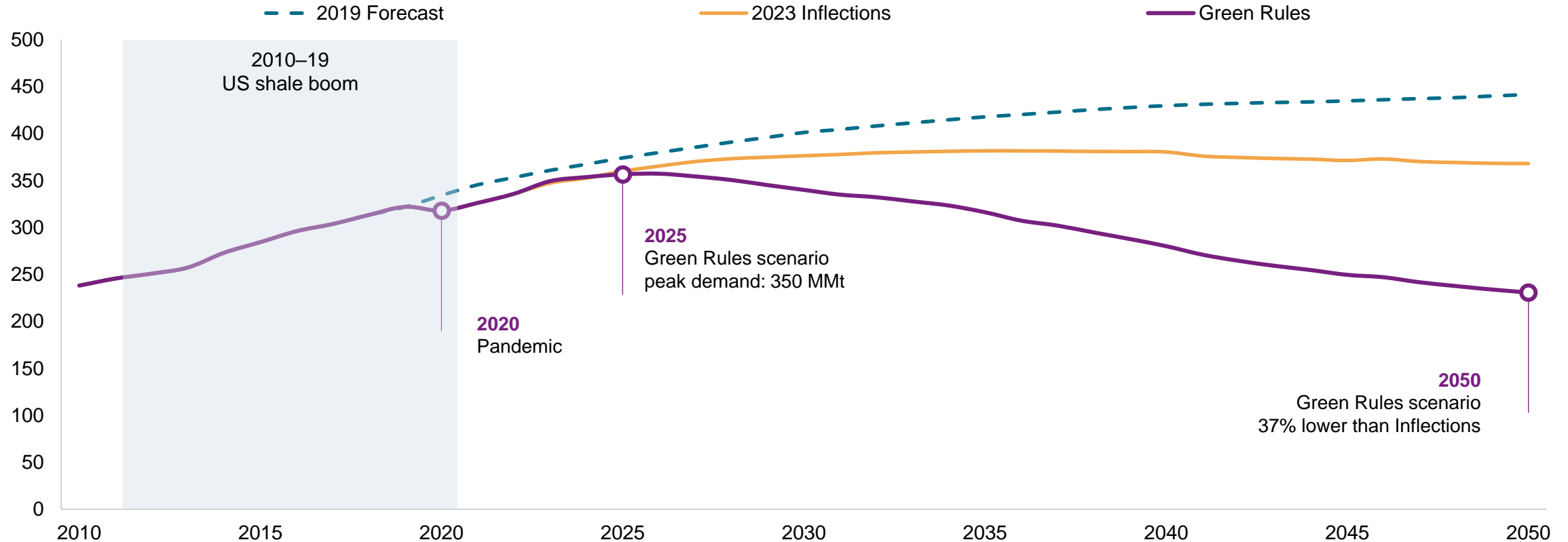
El Futuro del Gas LP



La transición energética

El impacto en el corto plazo es mínimo. En el largo plazo es mas considerable.

Global LPG total production: 2023 (million metric tons)



Data compiled Jan. 30, 2023.
Source: S&P Global Commodity Insights.

Conclusiones

- **Diferencia entre factores internos vs factores externos**
 - Fundamental para el diseño de la política pública
- **Controlar lo que se puede controlar**
 - La importancia de la inversión y la ganancia de eficiencia.
- **Hay mercado de Gas LP para rato.**
 - Demanda residencial estable
 - La transición energética tomara tiempo.
 - Nuevos usos/oportunidades

¡Muchas Gracias!

- **Adrian Calcano**

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