

Prospects for Natural Gas Supply in Colombia

October 2023

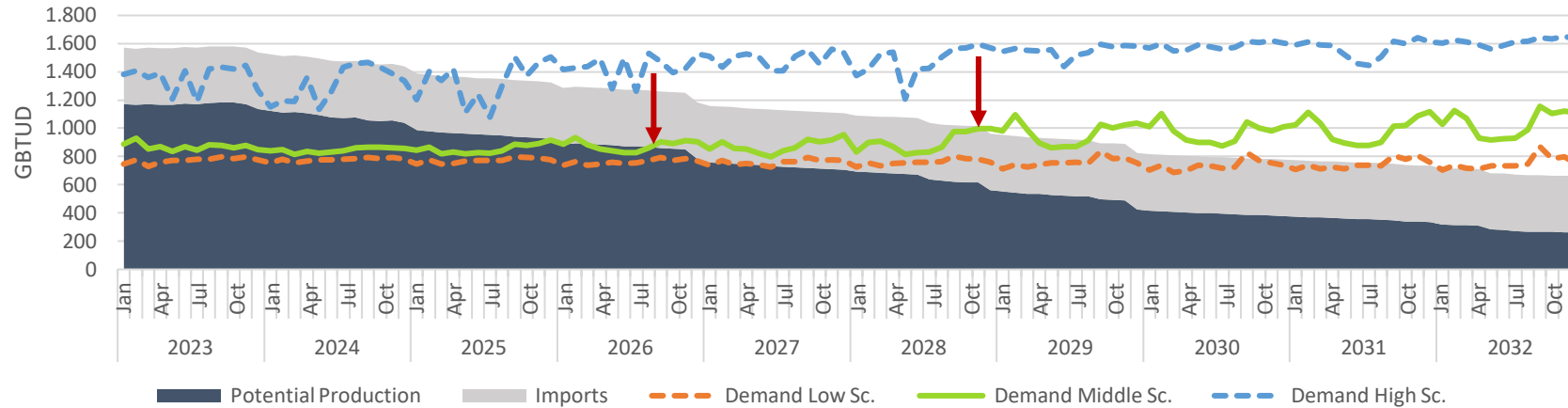


Grupo
Energía
Bogotá

*We improve
lives through
sustainable and
competitive energy*

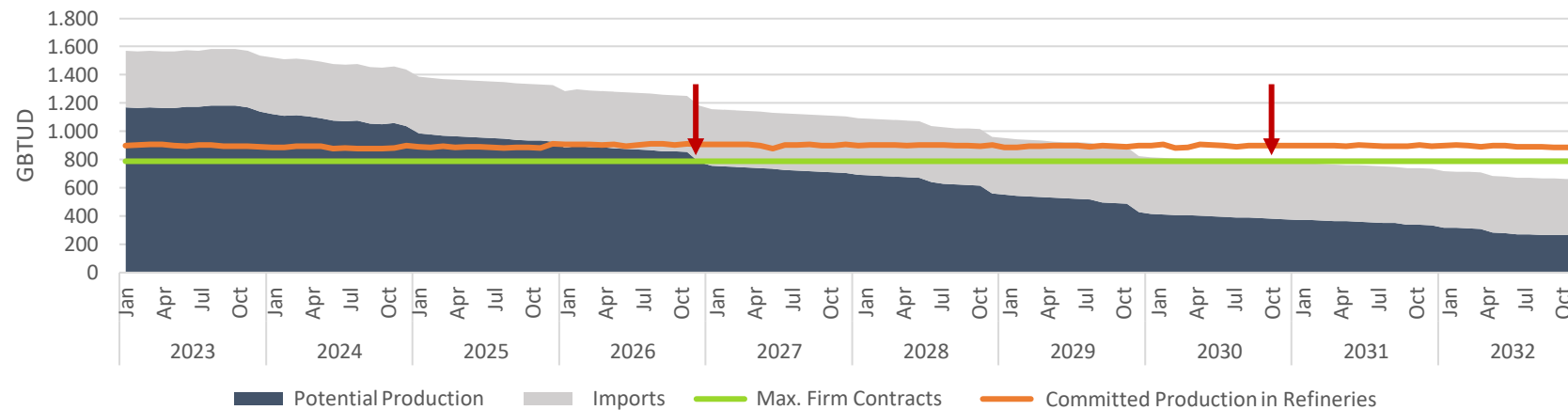
Signs point to a possible shortage in 2026

Potential Production vs Projected UPME Demand



- As of **September 2026**, the national potential production would be insufficient to cover the demand of the UPME's middle scenario.
- Considering the current regasification capacity, the demand of the UPME's middle scenario would not be met as of **December 2028**.

Potential Production vs. Maximum Contracting



- As of **December 2026**, potential domestic production would be insufficient to cover the current maximum contracting that guarantees firmness.
- Taking into account the current regasification capacity, the current maximum contracting that guarantees firmness would not be met as of **November 2030**.

Considerations

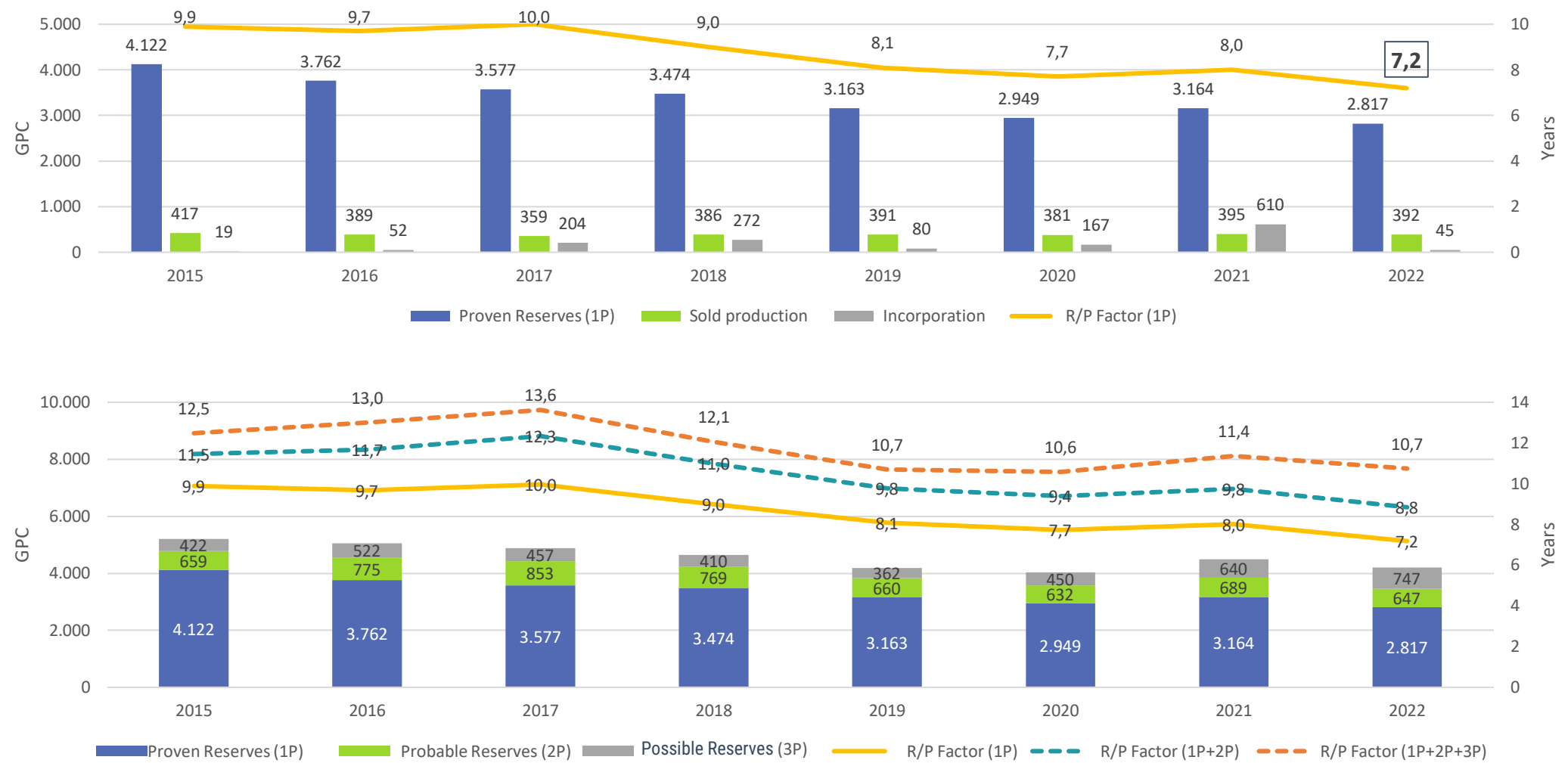
Current Situation

- The analyzed scenarios suggest the probability of not being able to meet demand with domestic production as of the end of 2026.
- The incorporation of reserves in 2022 fell 78% compared to the previous 7 years' average.
- The offshore contingent resources still have a high degree of uncertainty to become proven reserves and begin commercialization (not before 7 years have passed).
- Existing production fields can increase their potential if measures are taken to reduce their own flares and consumption
- Natural gas consumption has stagnated. The compound annual growth rate from 2017 to 2023 was 0.7%
- Regulatory processes generate conditions that prevent selling all available gas.
- Signs of shortages have led to an increase in primary market prices.

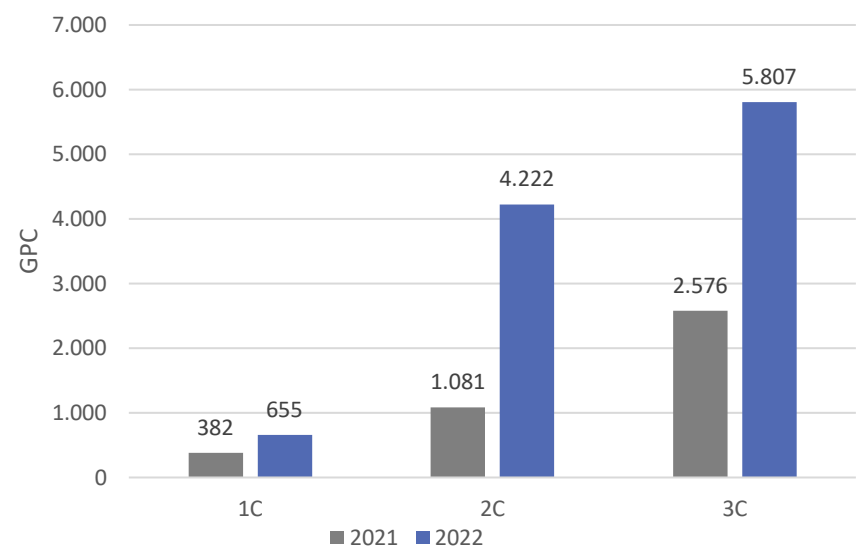
Prospect

- No announcements have been made regarding the incorporation of reserves that could replace declining fields in the short or medium term.
- SPEC has plans to expand its capacity by an additional 50 GBTUD in the short-term.
- Failure to award the Pacific regasification plant opens the door to private initiatives for this type of plant in La Guajira.
- Multiphase Pipeline regulation could allow adding +/- 50 GBTUD in the short-term.
- The CREG is working on regulatory projects to make sales processes more flexible.
- Interconnection of the coastal and inland systems (with full capacity) would facilitate greater competition in production.

The incorporation of reserves in 2022 fell 78% compared to the previous 7 years' average.



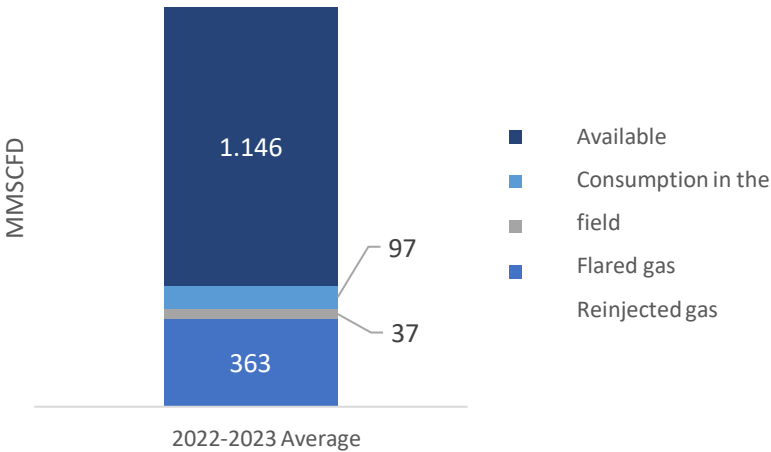
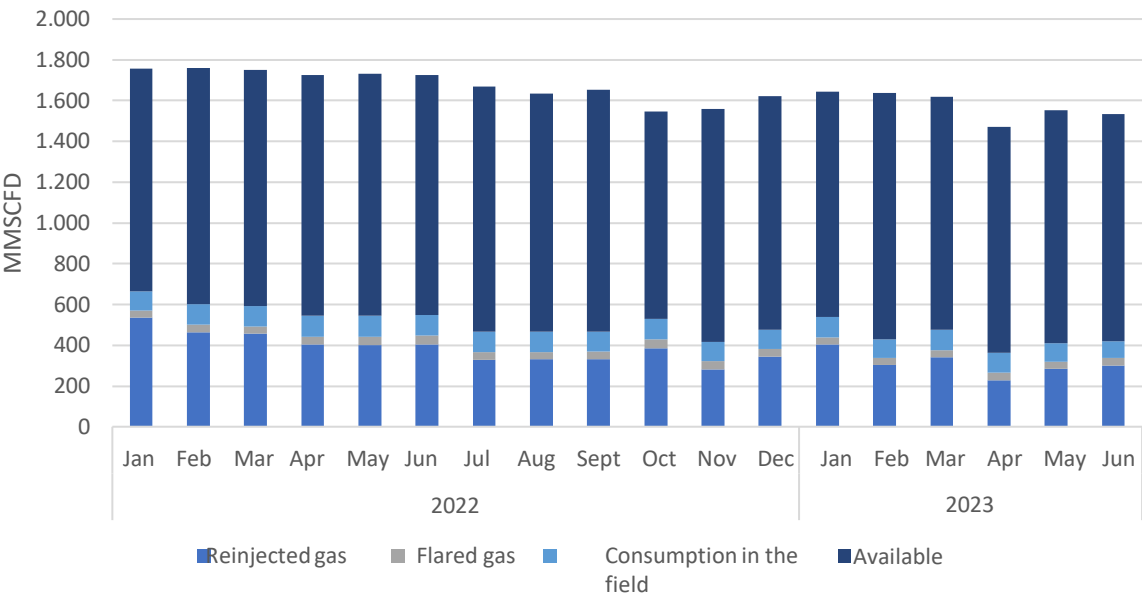
There are significant amounts of Contingent Resources, but still with a high degree of uncertainty.



Contingent Resources	1C [GPC]	2C [GPC]	3C [GPC]
Onshore	581	1,343	2,850
Offshore	75	2,878	2,957
Guajira	75	30	79
Sinú	-	2,774	-
Total	655	4,222	5,807
R/P (Years)*	1.7	10.8	14.8

* Taking 2022 sold production

On average, 30% of Fiscalized Production is destined for reinjection, field consumption and flaring



- Of 253 fiscalized fields:
- 12 reinject gas
 - 213 flare gas
 - 150 consume gas in the field
 - 107 fields have gas available for sale

53% of flared gas is concentrated in Meta, Casanare and Putumayo.

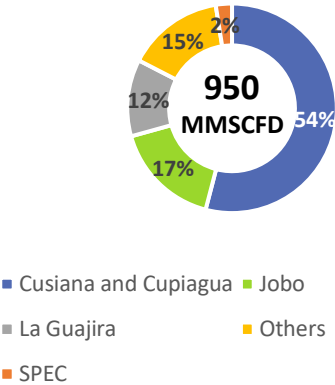
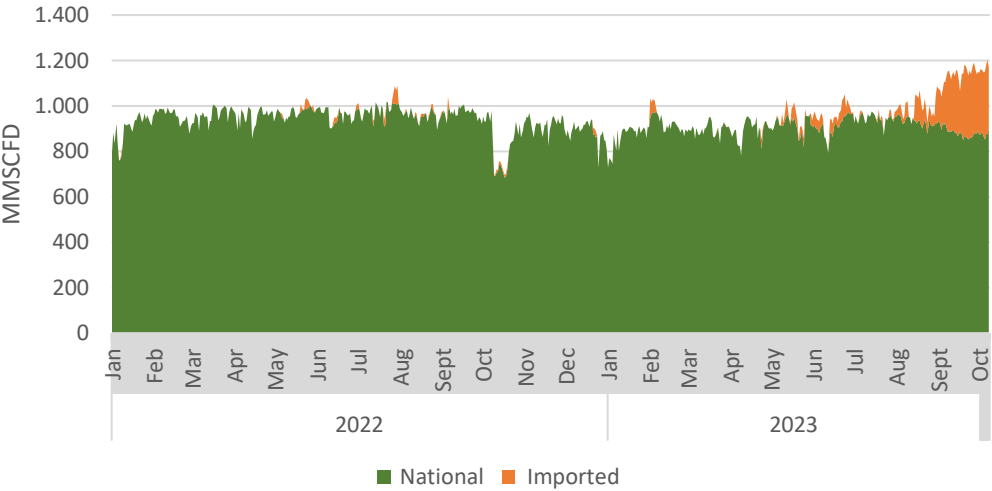
Department	Fiscalized Production
Casanare	65%
Córdoba	8%
La Guajira	7%
Sucre	6%
Boyacá	3%
Santander	2%
Atlántico	2%
Magdalena	1%
Cesar	1%
Goal	1%
Huila	1%
Putumayo	1%
Arauca	0.4%
Tolima	0.4%
Norte de Santander	0.4%
Bolívar	0.4%
Nariño	0.2%
Antioquia	0.1%

Department	Reinjected Gas
Casanare	96.3%
Córdoba	3.5%
La Guajira	0.2%

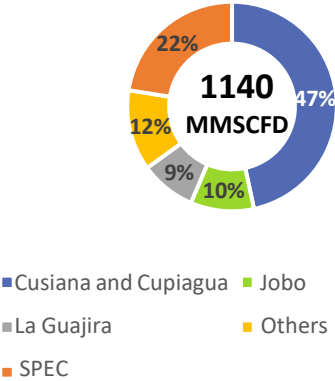
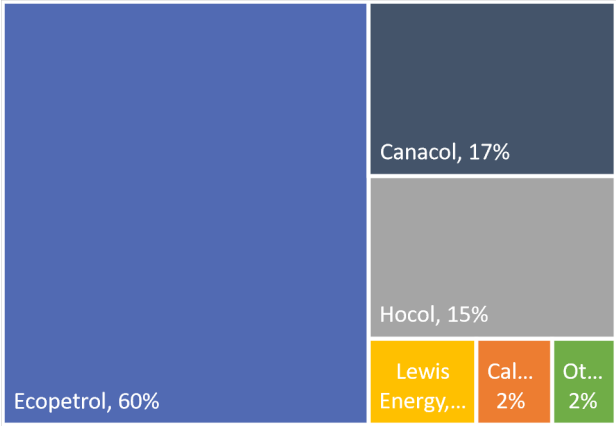
Department	Flared Gas
Meta	23%
Casanare	17%
Putumayo	13%
Arauca	8%
Nariño	8%
Huila	7%
Santander	6%
Cesar	6%
Magdalena	3%
Tolima	3%
Boyacá	3%
Antioquia	2%
Bolívar	4%
Sucre	1%
Other	1%

Department	Consumption in the Field
Casanare	52%
Santander	7%
Cesar	7%
La Guajira	6%
Huila	6%
Tolima	4%
Bolívar	4%
Boyacá	3%
Putumayo	2%
Antioquia	2%
Córdoba	2%
Sucre	1%
Arauca	1%
Magdalena	1%
Norte de Santander	1%
Goal	1%
Atlántico	0.4%
Nariño	0%

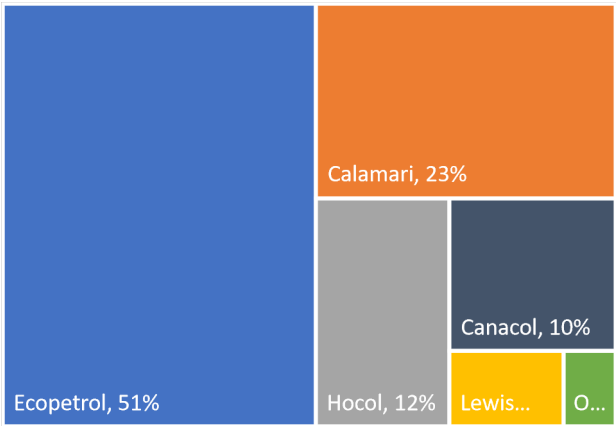
Ecopetrol and Hocol produce 75% of sold natural gas



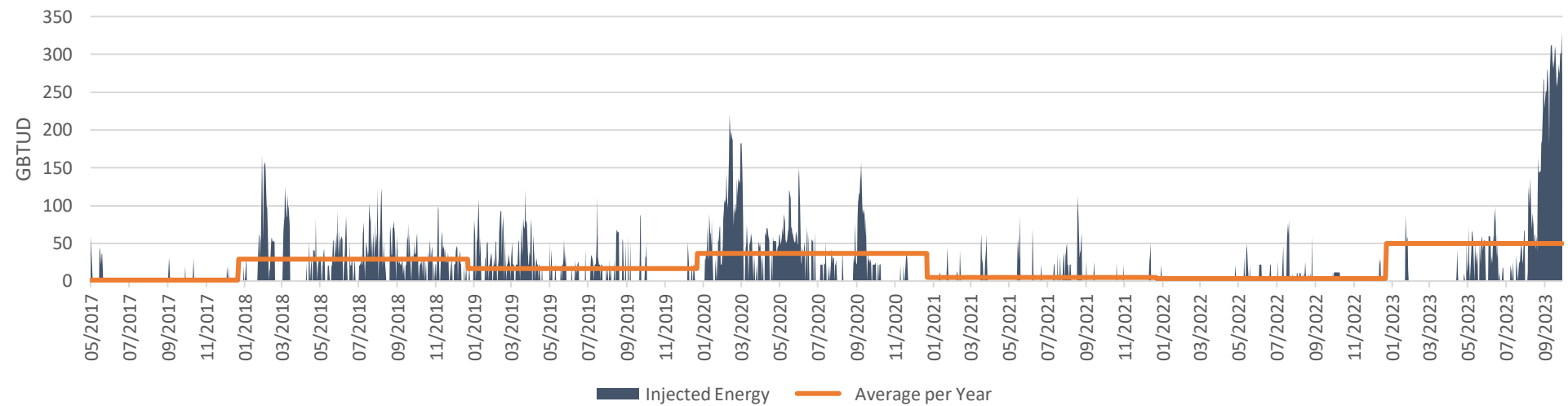
2022-2023 Average



Average Sept – Oct (2023)



In October 2023, there were historical volumes of imported natural gas injected into the system

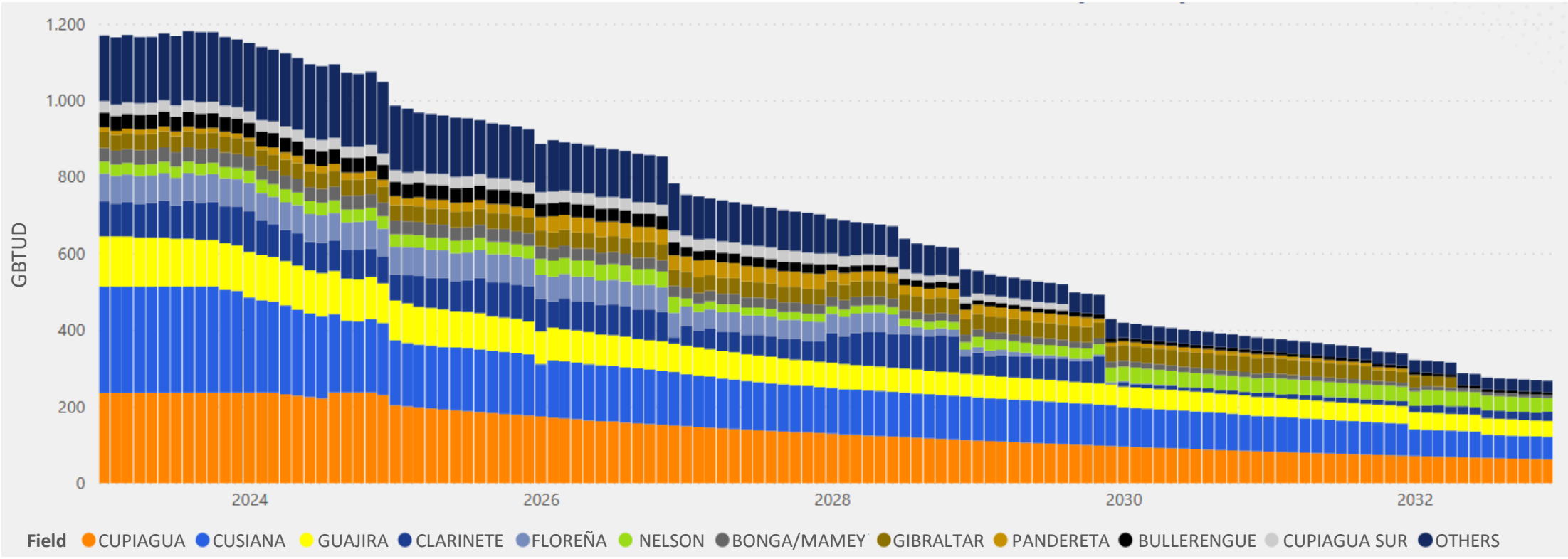


Year	Average Injected Energy [GBTUD]
2017	2
2018	30
2019	17
2020	37
2021	5
2022	4
2023	50

330 GBTUD
Oct. 7/2023

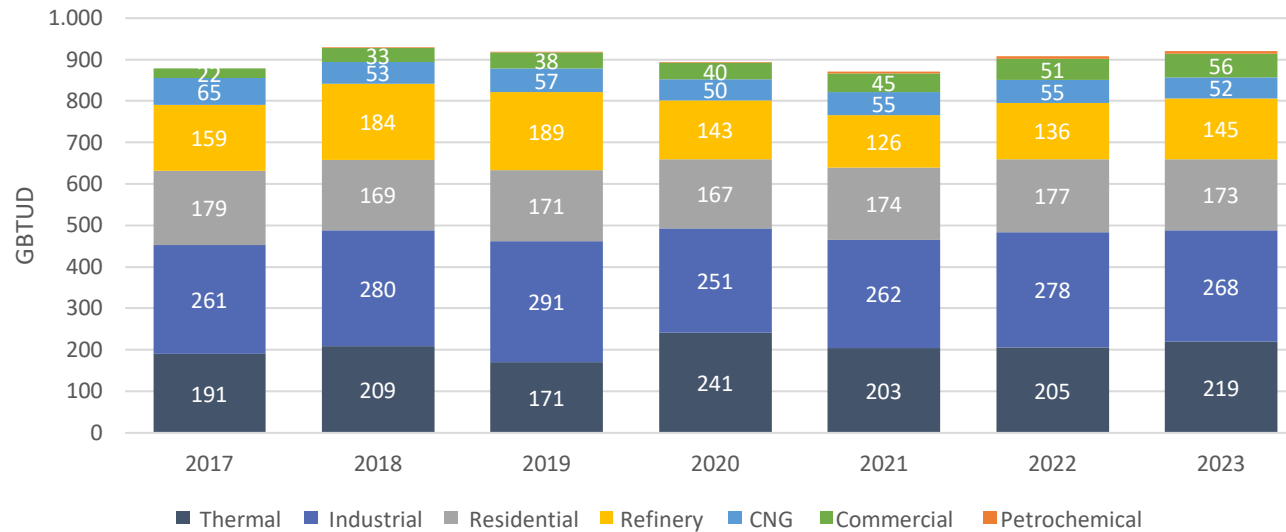
An accelerated decrease in production potential is expected over the next 10 years

Production Declaration (MME Res. 00478/2023)



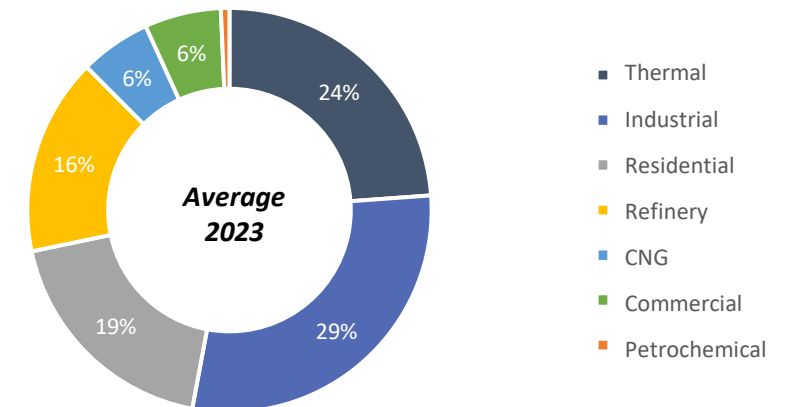
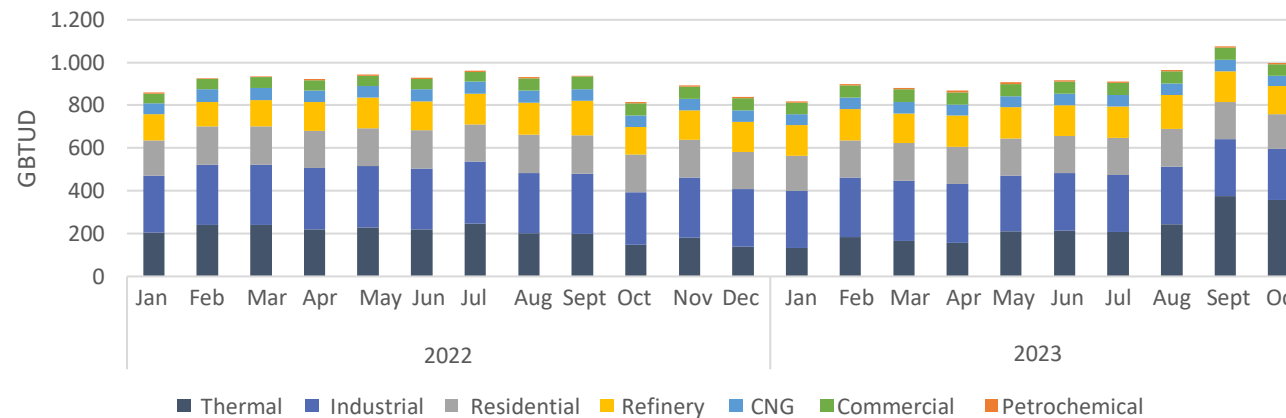
Natural gas consumption has stagnated.

The compound annual growth rate from 2017 to 2023 was 0.7%

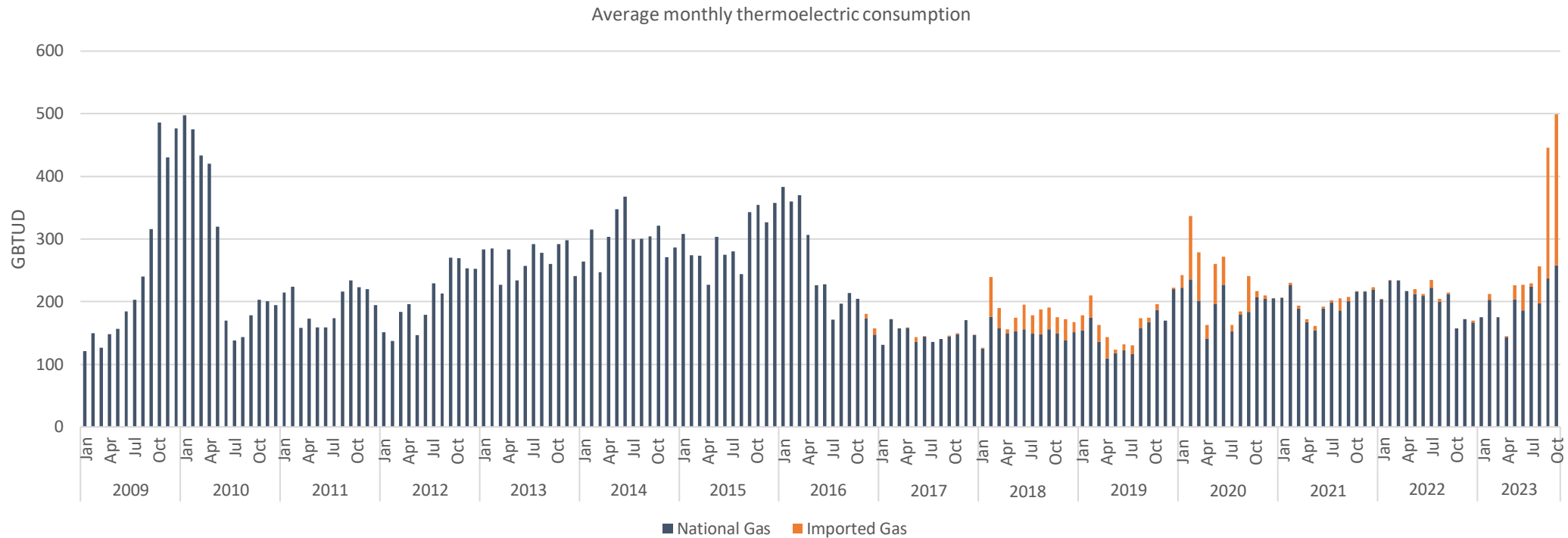


CAGR*
2017-2023
0.7%

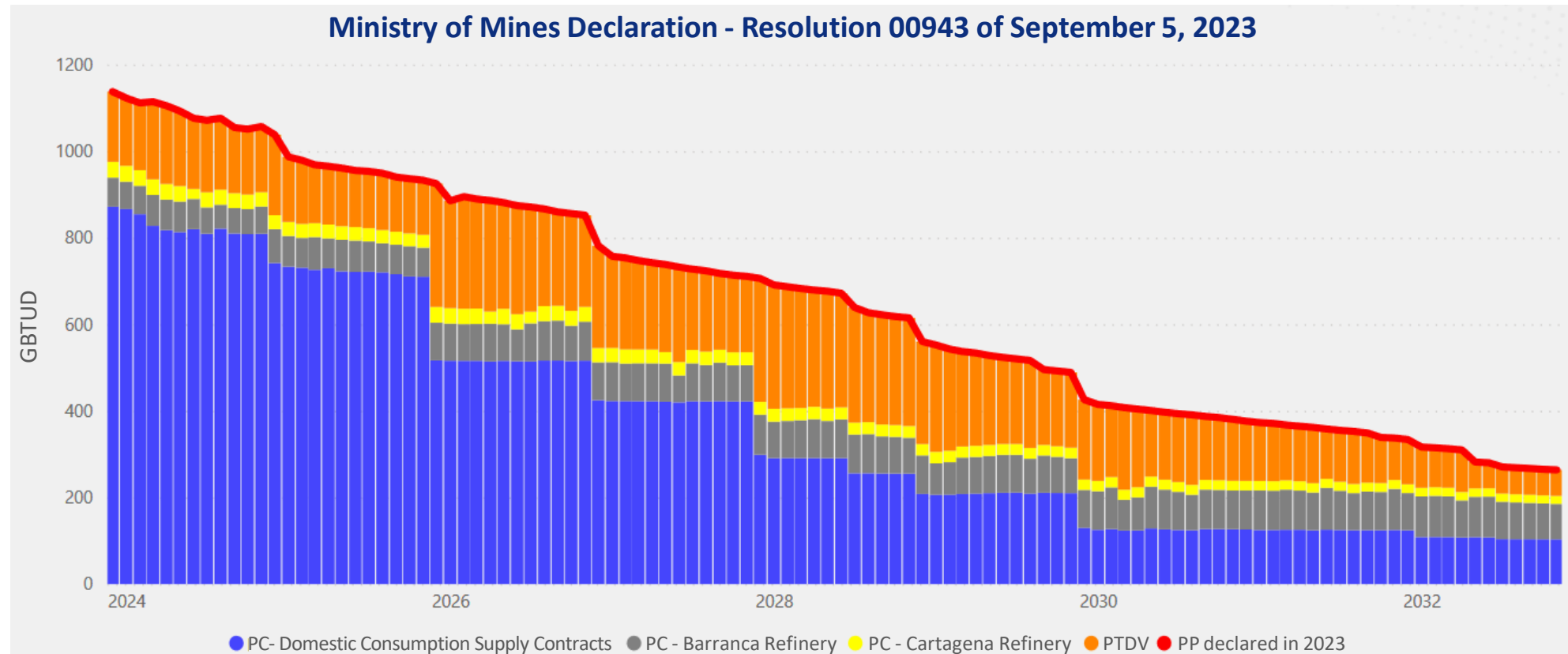
* CAGR: compound annual growth rate



In October 2023, thermal sector consumption reached highs not seen since 2009-2010



Production available for sale currently depends on the expiration of contracts, not on the increase in potential production.

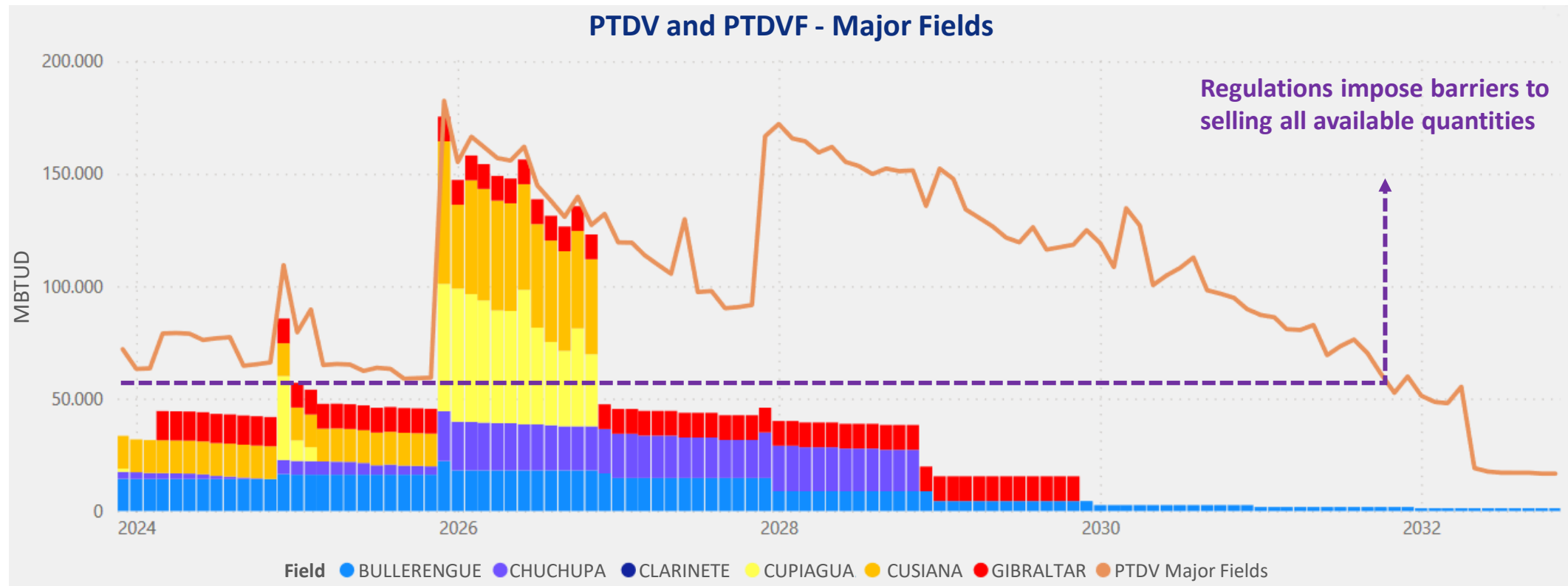


PC: Committed Production

PTDV: Total Production Available for Sale

PP: Production Potential

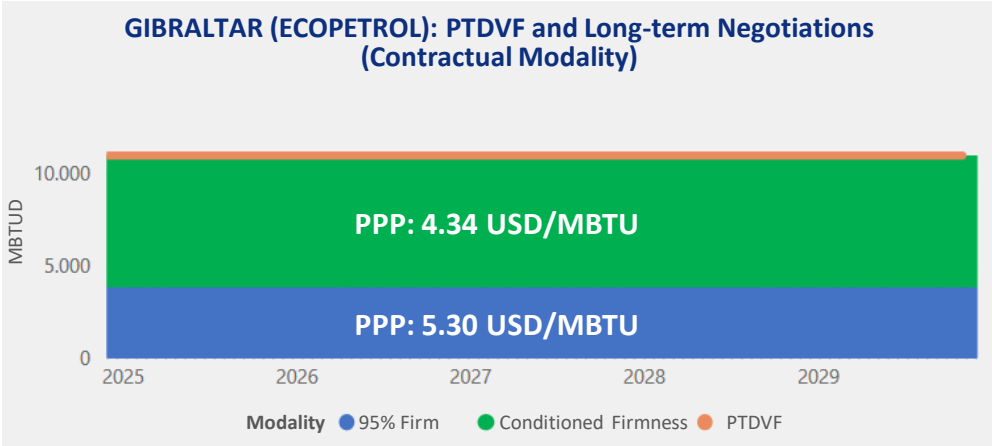
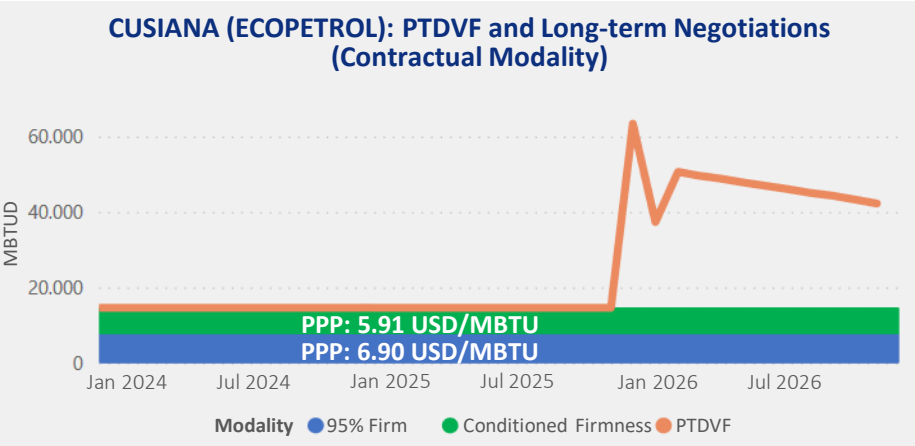
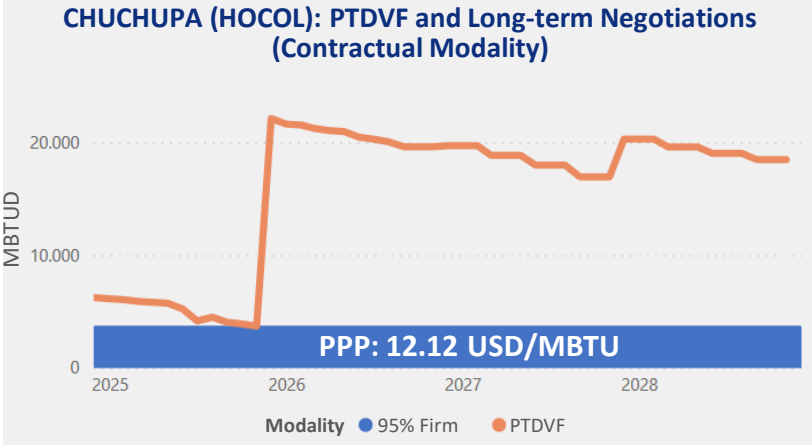
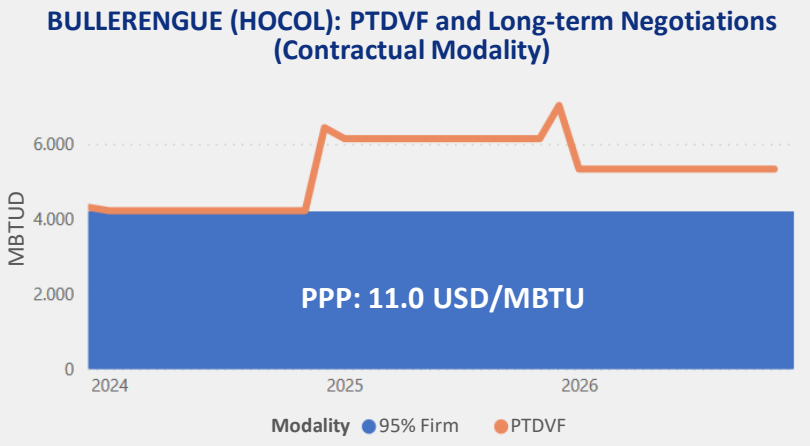
Current regulations create barriers to selling all available natural gas



PTDV: Total Production Available for Sale

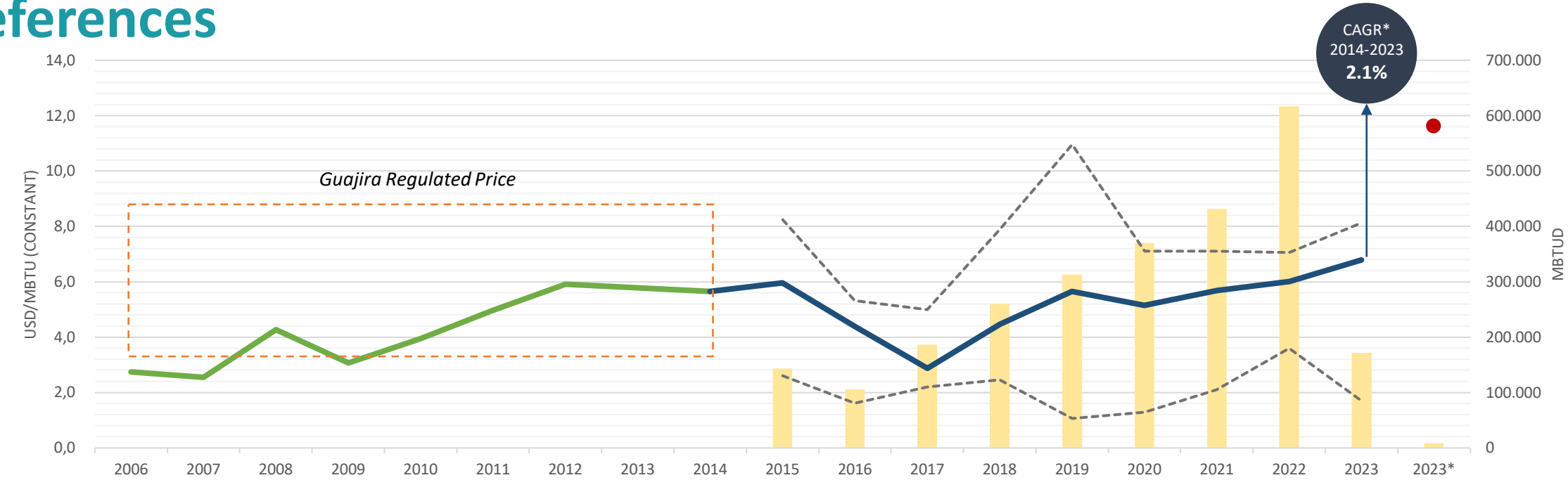
PTDVF: Total Production Available for Firm Sale

Signs of shortages led to increases in supply sale prices



PPP: Weighted Average Price

If timely action is not taken, prices may tend to international references



Average Contracted Quantities

Corresponds to the monthly average of the quantities of natural gas supply contracts in the primary market, for the national aggregate, published by the Market Manager (BMC).

Regulated Price

Corresponds to the average of the regulated prices for the fields of La Guajira, determined in February and August of each year.

Auction Price (unofficial)

Corresponds to the weighted average closing price of the auctions being carried out by the Producers (unofficial information).

Primary Market Average

Corresponds to the weighted average price (by quantity) of natural gas supply contracts in the primary market, for the national aggregate, published by the Market Manager (BMC).

Minimum and maximum price on the Primary Market

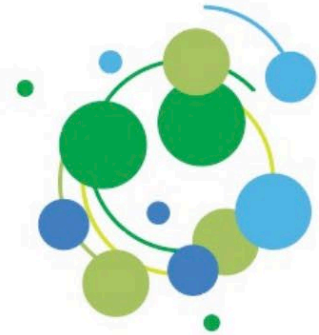
Corresponds to the minimum and maximum price of natural gas supply contracts in the primary market, for the national aggregate, published by the Market Manager (BMC).

* CAGR: compound annual growth rate

Updated: 09/20/2023

What can be done to secure the supply of natural gas?

Shares	Entity	Considerations
Adjust the regulations on selling the supply of natural gas	CREG	Make sales conditions more flexible in order to maximize the quantities of contracted natural gas. Progress: draft CREG Resolution 702 003 2023 and 702 005 2023 (transitional)
Make selling SPEC's regasification capacity to any consumption sector feasible.	Ministry of Energy CREG	Allow the current regasification capacity and future SPEC expansions to be sold to any consumer sector
Accelerate the definition of tariffs for IPAT projects	CREG	Resolve the observations and finalize the tariff definitions of IPAT projects to make project implementation feasible. Progress: CREG concept of the feasibility of starting operations prior to IPAT assignment, pending the resolution of appeals.
Define the regulation of Multiphase Pipelines	Ministry of Energy	Define the regulation of Multiphase Pipelines in such a way that the market can count on additional quantities of natural gas, without this implying a substitution or bypass to the National Transportation System. Progress: final resolution under analysis by the SIC
Define actions to increase production potential	ANH Ministry of Energy Ecopetrol	Analyze actions to increase the production potential of the fields by reducing re-injections, flares and their own consumption
Accelerating the development of offshore resources	ANH Ministry of Energy Ecopetrol	Analyze actions to anticipate the sale of offshore resources
Incentivize the incorporation of proven reserves	ANH Ministry of Energy Ecopetrol	Promote actions to encourage incorporating proven reserves with the development of current projects or new explorations
Analyze signals to encourage imports	UPME Ministry of Energy	Provide signals that encourage private initiative to import natural gas as a reliability and backup mechanism



Grupo Energía Bogotá



For the restricted use of GRUPO ENERGÍA BOGOTÁ S.A. ESP. and its subsidiaries. All rights reserved. No part of this presentation may be reproduced or used in any form or by any means without the express permission of GRUPO ENERGÍA BOGOTÁ S.A. ESP. or its subsidiaries as owners of the information.