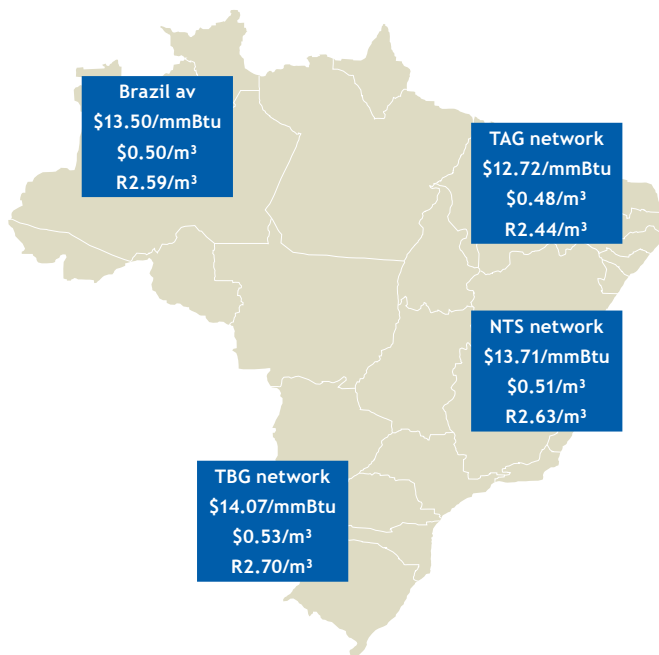


## OVERVIEW

- Brazilian LNG import capacity is growing by 50pc this year with three new private-sector terminals opening.
- Brazilian biomethane prices rose last week, mirroring rising Brent prices.
- Brazil needs to increase liquidity and establish taxation to let gas swap contracts remove biomethane trade constraints.
- Piauí state aims to lead hydrogen hub to supply industry, governor Rafael Fonteles told Argus.

### National/regional average gas supply contract prices



## Contents

Gas markets analysis	2
Equivalent gas prices	2
Biomethane and Cbio market commentary	3
Energy transition overview	3
CNG and LNG freights	4
Natural gas midstream	5
Fundamentals	8
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## PRICE SUMMARY

Natural gas		\$/mmBtu	
	12 Apr	5 Apr	±
LNG des Brazil	9.02	8.24	+0.78
Brazil av gas network	13.500	13.525	-0.03
TAG gas network	12.724	12.739	-0.02
NTS gas network	13.706	13.724	-0.02
TBG gas network	14.071	14.112	-0.04
Henry Hub day-ahead	1.325	1.575	-0.25

LPG		\$/mmBtu	
	12 Apr	5 Apr	±
Propane-butane 70:30 Santos	11.68	12.13	-0.46

Crude		\$/bl	
	12 Apr	5 Apr	±
North Sea Dated	93.310	93.190	0.12

Exchange rate			
	12 Apr	5 Apr	±
R:\$	5.1364	5.0520	0.084

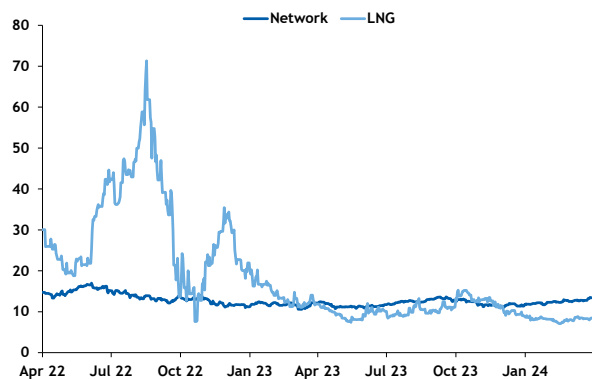
  

Biomethane		R/m <sup>3</sup>	
	12 Apr	5 Apr	±
Sao Paulo north biomethane parity price	2.93	2.89	+0.04
Sao Paulo south biomethane parity price	2.739	2.702	+0.04
Rio de Janeiro biomethane parity price	3.103	3.060	+0.04

Cbio			
	12 Apr	5 Apr	±
Cbio BRL/Cbio	98.00	100.00	-2.00
Cbio USD/Cbio	19.600	20.000	-0.40

### LNG des Brazil vs Brazil av gas contract price \$/mmBtu



## GAS MARKETS ANALYSIS

## Private LNG terminals boost Brazil supply

A new phase in Brazil's LNG market has begun, with three private-sector terminals starting operations this year, increasing import capacity by nearly 50pc to 133mn m<sup>3</sup>/d.

US LNG developer New Fortress Energy is operating two of the new terminals, including the 14mn m<sup>3</sup>/d **Gas Sul** terminal in Santa Catarina state that received its first cargo last month. New Fortress' terminal in **Barcarena**, in the northern Para state, started on 29 February.

Gas Sul is connected to the the Brazilian gas market through the TBG pipeline, making it capable of supplying industrial and residential consumers in the south of Brazil, as well as other regions where the traditional supply by pipeline from Bolivia is expected to further decline.

Barcarena consists of an offshore terminal and floating storage regasification unit (FSRU) that will supply LNG to several industrial customers, including a 15-year contract with Norsk Hydro's Alunorte alumina refinery, the largest in the world. The terminal will also supply natural gas to New Fortress' 630MW power plant, which is under construction.

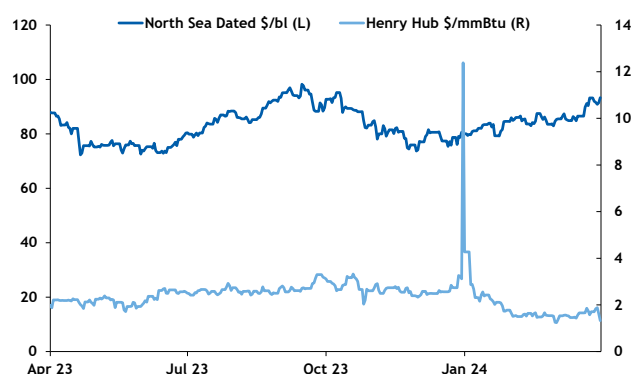
The third LNG facility, controlled by **Compass, Cosan**, is located Sao Paulo state and expected to start operations soon.

Before this year, Brazil had five LNG regasification terminals. The first three were built by Petrobras: Pecém (2008), Baía de Guanabara (2009) and Bahia (2014, leased by Excelerate after 2021). In 2019, Sergipe state power company (Celse) opened the Sergipe terminal, now operated by Eneva. The latest terminal, Açú, was developed by GNA in 2021.

Initially, the Sergipe and Açú terminals exclusively served the companies' thermal power plants but are now in the process of connecting to Brazil's gas pipeline network. The Sergipe pipeline is already under construction, while the Açú pipeline is in the planning phase.

A hydropower supply crisis in 2020 and 2021 prompted Brazilian importers to buy 6.3mn t of LNG in 2021, data from the trade ministry show. With hydropower reservoirs at full capacity since 2022, Brazil cut LNG imports to 3.1mn t that year and to 602,300t last year, but in the first quarter of 2024 Brazil has imported 486,000t, a sign of capacity growth.

## Henry Hub vs Brent



LNG regasification in Brazil provides flexibility to meet fluctuating demand for natural gas in the electricity sector. Given the intermittent and seasonal nature of electricity generation from renewable sources, the operation of thermal power plants varies considerably.

"It serves as a solution to manage supply inconsistencies," according to consultancy Energy Gas.

The LNG regasification projects in Brazil not only supply thermal energy but may also address broader market demand, particularly in underserved regions such as the north and even some gas-restricted areas in the south. With nearly half of Brazil's natural gas production reinjected to maintain crude output as of February, just one-third is available for the open market.

By *Betina Moura*

Delivered LPG Brazil, 12 Apr			
	Mid \$/mmBtu	Mid \$/t	± \$/t
Propane Santos	11.5623	551.9827	-23.0294
Propane-butane 90:10 Santos	11.6004	552.8874	-22.6002
Propane-butane 70:30 Santos	11.6770	554.6970	-21.7417
Propane-butane 50:50 Santos	11.7541	556.5066	-20.8832
Propane Suape	11.0011	525.1924	-24.0230
Propane-butane 90:10 Suape	11.0383	526.0972	-23.5938
Propane-butane 70:30 Suape	11.1131	527.9067	-22.7353
Propane-butane 50:50 Suape	11.1883	529.7163	-21.8768

*Includes AFRMM of 8%*

Equivalent natural gas prices	\$/m <sup>3</sup>		
	12 Apr	5 Apr	±
Price differential to LNG des Brazil			
Henry Hub day-ahead	-0.276	-0.242	-0.034
Brazil av gas network	0.167	0.197	-0.030
Petroleum Coke del Brazil 6.5% sulphur 40 HGI	72.481	73.058	-0.577
Fuel Oil Brazil Petrobras posted price - Paulinia	1009.753	997.987	+11.766
Diesel S500 Brazil Petrobras posted price - Paulinia	846.564	860.742	-14.178
Propane-butane 70:30 Santos	304.114	316.784	-12.670

Argus publishes daily comparisons between the price of LNG delivered to Brazil and competing generation fuels on a calorific basis in \$/m<sup>3</sup>. For the complete methodology visit [www.argusmedia.com/methodology](http://www.argusmedia.com/methodology).

## BIOMETHANE AND CBIO MARKET COMMENTARY

### Brazil biomethane: Prices rise mirroring Brent

Brazilian biomethane prices rose this week, mirroring rising Brent prices, while Cbio decarbonization credits ended the week close to their starting point.

Biomethane prices in all three monitored regions climbed. In Sao Paulo's south prices ended the week at R2.739/m<sup>3</sup> (\$0.5315/m<sup>3</sup>), down from R2.702/m<sup>3</sup> a week earlier. Prices in Sao Paulo's north rose to R2.929/m<sup>3</sup> from R2.888/m<sup>3</sup>. Prices in Rio de Janeiro state reached R3.103/m<sup>3</sup> from R3.06/m<sup>3</sup>.

Atlantic basin benchmark North Sea Dated rose to \$93.31/bl on 12 April, from \$93.19/bl a week earlier, pushing biomethane prices up. Cbio prices remained largely unchanged, rising to R100.05 on 12 April, from R100 a week earlier.

Despite the lack of movement week-to-week, news surrounding the revoking of the licenses from fuel distributors who have not been buying the mandatory credit agitated the Cbio market. Hydrocarbons regulator ANP has informed the companies of their claims against them.

During the revocation process, companies will have two opportunities to present allegations, including the possibility

Biomethane			R/m <sup>3</sup>
	12 Apr	5 Apr	±
Sao Paulo north biomethane parity price	2.93	2.89	+0.04
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Cbio			
	12 Apr	5 Apr	±
Cbio BRL/Cbio	98.00	100.00	-2.00
Cbio USD/Cbio	19.600	20.000	-0.40

of paying the debt, according to ANP. Distributors will only be able to maintain or lose their authorization after that process. The first instance decision can still be appealed to the ANP board.

Cbio retirement occurs when the credit is withdrawn from the market. Under Renovabio, a Cbio generated from the sale of biofuels represents 1t of CO<sub>2</sub> avoided. The program sets annual targets for fuel distributors' greenhouse gas emissions. The goals are achieved through the obligatory purchase of Cbios marketed by biofuel producers. Biomethane producers can generate Cbios.

## ENERGY TRANSITION OVERVIEW

### Swap operations could unlock Brazil's RNG

Brazil needs to increase liquidity and establish taxation to let gas swap contracts unlock constraints on biomethane trade, industry observers said.

Gas swap operations are commercial exchanges of products between traders in different regions that do not have a way to physically deliver. For example, a biomethane plant in one region could sell to a consumer in a different, unconnected region if it is able to get that transaction mirrored in its own region – creating a "swap" of products without the need of delivery away from the local pipelines.

This mechanism could cut logistics costs for biomethane delivery and provide a way around the single largest hurdle to Brazilian biomethane market growth – a lack of connections between the biomethane plants scattered across the country and potential customers in major cities.

The main challenges for swaps in the biomethane sector are the lack of gas market liquidity to find mirror transactions in different regions and the fiscal challenge of properly taxing the operations, according to Maria Fernanda Soares, partner at the Machado Meyer law firm.

"Unlocking the tax challenge would be a better way to

make this type of transaction viable, because it would be an alternative to the regulatory prohibition of injecting gas into the distribution network," she said.

Biomethane certificates attesting to its renewable attributes can also lessen logistical challenges, as buying a certificate substitutes the need for the physical delivery.

"Today, everyone in the sector believes there is a need for certification to advance so that biomethane has an environmental validation," said Marcelo Mendonça, strategy and market director for natural gas distributors' association Abegas. "Otherwise, you are just buying a more expensive natural gas molecule."

But biomethane certificates will not be enough to create liquidity between regions, said Soares: "Many companies tend to prefer buying their biomethane with the certificates included, so there would be difficulty in having enough surplus."

Under a draft of a so-called [fuel of the future bill](#), Brazil would create a biomethane mandate with the option of using guarantees of origin to fulfill obligations. The bill still awaits senate approval.

*By Rebecca Gompertz*

## CNG FREIGHTS

Compressed Natural Gas truck freights rates (average Sao Paulo state), 12 Apr				
	R/m <sup>3</sup>	±% last month	\$/m <sup>3</sup>	±% last month
CNG truck freight rate 150km round trip	0.755	-0.00	0.15	-0.01
CNG truck freight rate 170km round trip	0.962	-0.00	0.19	-0.01
CNG truck freight rate 190km round trip	1.056	-0.00	0.21	-0.01
CNG truck freight rate 210km round trip	1.149	-0.01	0.22	-0.01
CNG truck freight rate 230km round trip	1.243	-0.01	0.24	-0.01
CNG truck freight rate 250km round trip	1.337	-0.01	0.26	-0.01
CNG truck freight rate 270km round trip	1.431	-0.01	0.28	-0.01
CNG truck freight rate 290km round trip	1.524	-0.01	0.30	-0.01
CNG truck freight rate 310km round trip	1.524	-0.11	0.30	-0.03
CNG truck freight rate 330km round trip	1.618	-0.11	0.32	-0.03
CNG truck freight rate 350km round trip	1.712	-0.11	0.33	-0.03
CNG truck freight rate 370km round trip	1.899	-0.01	0.37	-0.02
CNG truck freight rate 390km round trip	1.993	-0.02	0.39	-0.02

Maximum capacity transportation: 6.800 m<sup>3</sup>/ includes two extra trucks for storage and loading

## LNG FREIGHTS

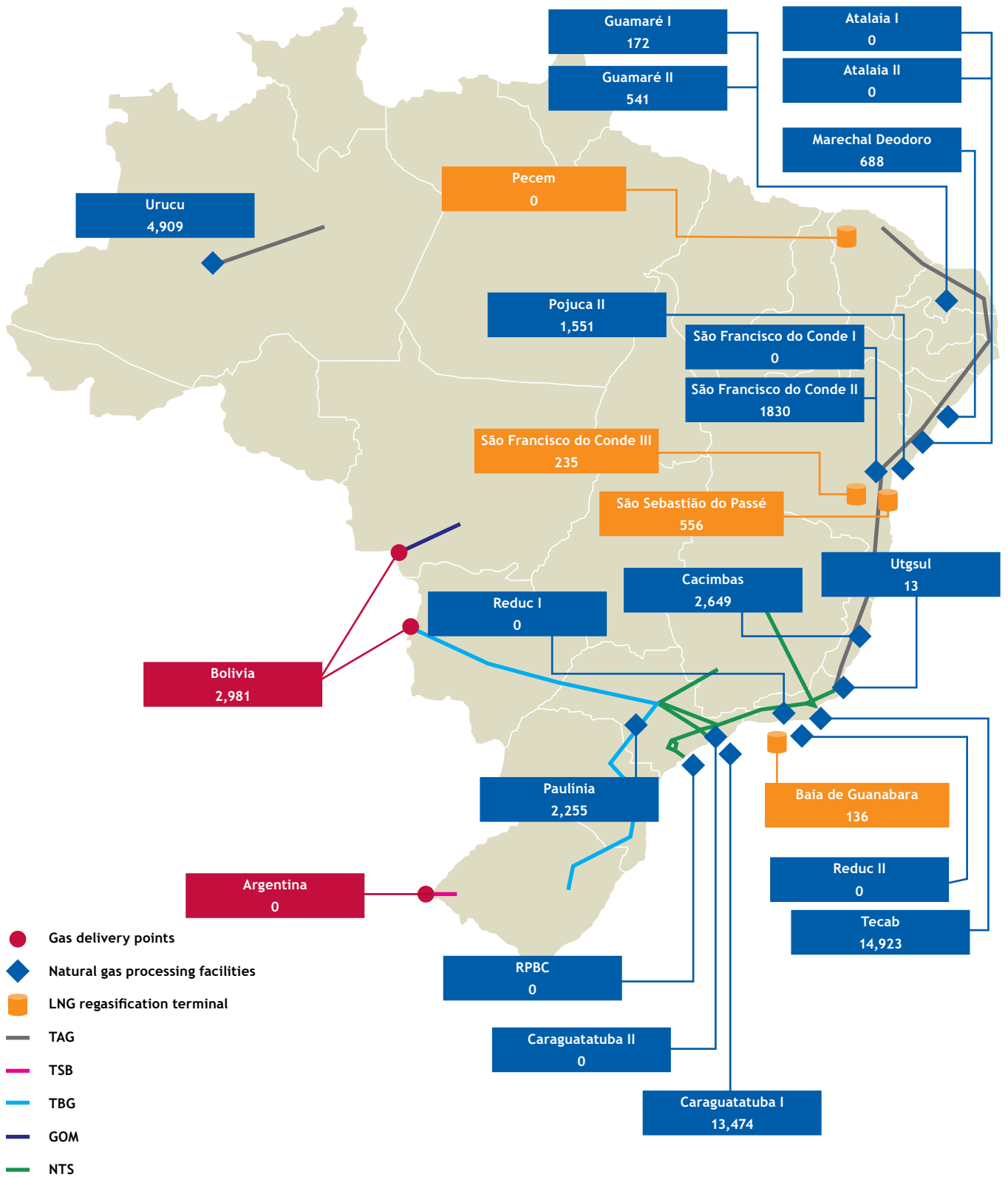
Liquefied Natural Gas truck freights rates (average Sao Paulo state), 12 Apr				
	R/m <sup>3</sup>	±% last month	\$/m <sup>3</sup>	±% last month
LNG truck freight rate 150km round trip	0.143	0.00	0.03	0.00
LNG truck freight rate 200km round trip	0.161	0.00	0.03	0.00
LNG truck freight rate 300km round trip	0.197	0.00	0.04	0.00
LNG truck freight rate 400km round trip	0.233	0.00	0.05	0.00
LNG truck freight rate 500km round trip	0.269	0.00	0.05	0.00
LNG truck freight rate 600km round trip	0.305	0.00	0.06	0.00
LNG truck freight rate 700km round trip	0.341	0.00	0.07	0.00
LNG truck freight rate 800km round trip	0.377	0.00	0.07	0.00
LNG truck freight rate 900km round trip	0.413	0.00	0.08	0.00
LNG truck freight rate 1000km round trip	0.449	0.00	0.09	0.00
LNG truck freight rate 1100km round trip	0.484	0.00	0.09	0.00
LNG truck freight rate 1200km round trip	0.520	0.00	0.10	0.00
LNG truck freight rate 1300km round trip	0.556	0.00	0.11	0.00
LNG truck freight rate 1400km round trip	0.592	0.00	0.12	0.00
LNG truck freight rate 1500km round trip	0.628	0.00	0.12	-0.01

Maximum capacity transportation: 34.400 m<sup>3</sup>

**BRAZIL NATURAL GAS MIDSTREAM**

Average volumes transported, 1 Feb - 29 Feb

'000 m<sup>3</sup>/d



— ANP

## BRAZIL NATURAL GAS MIDSTREAM

## Natural gas pipeline weighted average calculated transportation tariffs

TAG	R/mmbtu								
	Entry point				Exit point				
	Alagoas	Bahia	Ceará	Espírito Santo	Paraíba	Pernambuco	Rio de Janeiro	Rio Grande do Norte	Sergipe
Atalaia I	na	na	na	na	na	na	na	na	na
Atalaia II	na	na	na	na	na	na	na	na	na
Cacimbas	11.5077	11.4056	11.8285	11.5137	11.6269	11.5832	9.9244	11.7402	11.4568
LNG Pecém	11.7478	11.6457	12.0686	11.7538	11.8670	11.8233	10.1645	11.9803	11.6969
Guamaré I	11.6017	11.4996	11.9225	11.6077	11.7209	11.6771	10.0184	11.8342	11.5508
Guamaré II	na	na	na	na	na	na	na	na	na
Marechal Deodoro	11.4241	11.3220	11.7449	11.4302	11.5433	11.4996	9.8409	11.6567	11.3732
Pojuca II	11.3702	11.2681	11.6910	11.3762	11.4894	11.4457	9.7869	11.6027	11.3193
TECAB	11.6126	11.5104	11.9333	11.6186	11.7317	11.6880	10.0293	11.8451	11.5617
Connection TECAB	5.9221	5.8199	6.2428	5.9281	6.0412	5.9975	4.3388	6.1546	5.8712
LNG São Francisco do Conde III	11.3941	11.2920	11.7149	11.4002	11.5133	11.4696	9.8109	11.6267	11.3432
São Francisco do Conde I	na	na	na	na	na	na	na	na	na
São Francisco do Conde II	11.3957	11.2935	11.7165	11.4017	11.5148	11.4711	9.8124	11.6282	11.3448
LNG São Sebastião do Passé (TRBA)	11.3733	11.2712	11.6941	11.3794	11.4925	11.4488	9.7901	11.6059	11.3225
UTGSUL	11.5568	11.4546	11.8775	11.5628	11.6759	11.6322	9.9735	11.7893	11.5059

All tariffs have been updated considering 2024 data. Tariffs include surcharges and Empacotamento(Linepack) (except penalties), as fully approved by regulator ANP.

– ANP and TAG, TBG and NTS

TBG	R/mmbtu									
	Entry point			Exit point						
	Gascar	Mato Grosso do Sul	Paraná	Rio Grande do Sul	Santa Catarina 1	Santa Catarina 2	São Paulo 1	São Paulo 2	São Paulo 3	São Paulo 4
Corumbá	8.0280	10.3403	11.7125	13.4215	12.2628	12.2628	10.6436	10.8536	10.8493	10.9828
Gascar	na	2.9020	4.2742	5.9832	4.8245	4.8245	3.2053	3.4153	3.4110	3.5445
Garuva	4.9381	7.2504	8.6226	10.3316	9.1729	9.1729	7.5537	7.7637	7.7594	7.8929

All tariffs have been updated considering 2024 data. Tariffs include surcharges and Empacotamento(Linepack) (except penalties), as fully approved by regulator ANP.

– ANP and TAG, TBG and NTS

NTS	R/mmbtu				
	Entry point		Exit point		
	Minas Gerais	Replan Interconnection	Connection TECAB	Rio de Janeiro	São Paulo
Caraguatatuba	7.9841	5.7454	5.7229	7.5822	7.7101
Paulínia	7.8358	5.5972	5.5747	7.4340	7.5619
LNG Baía de Guanabara	7.6811	5.4425	5.4200	7.2793	7.4072
Guapimirim	7.7542	5.5156	5.4931	7.3524	7.4803
Guararema Interconnection	3.8374	1.5988	1.5763	3.4356	3.5635
Replan Interconnection	3.8404	1.6018	1.5792	3.4385	3.5664
TECAB	8.1494	5.9107	5.8882	7.7475	7.8754
TECAB Interconnection	3.8404	1.6018	1.5792	3.4385	3.5664

NTS' 2024 tariffs still await ANP approval. Data refers to the previous year's numbers and include surcharges and Empacotamento(Linepack) (except penalties).

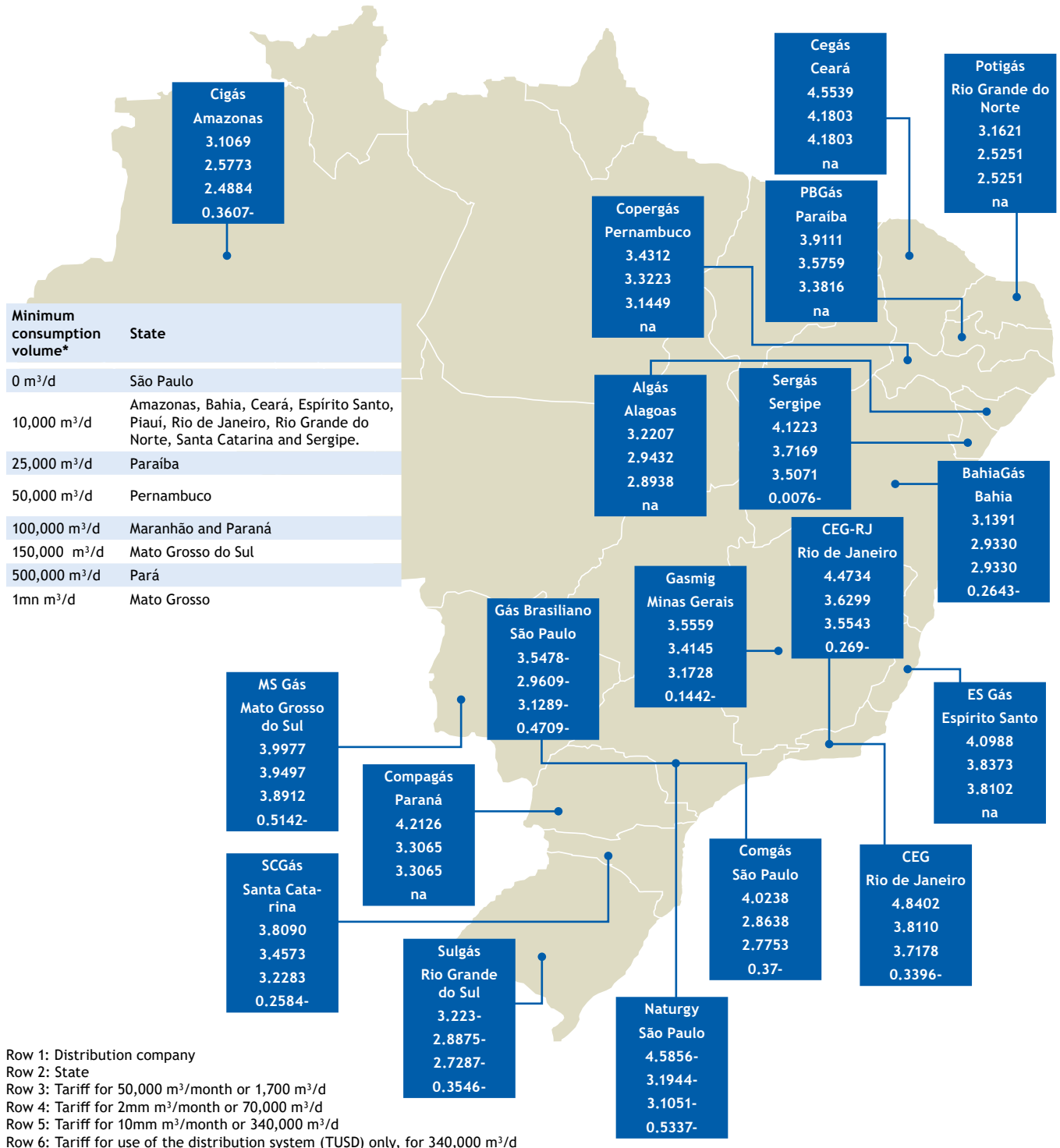
– ANP and TAG, TBG and NTS

Legacy contracts must follow the transportation costs established in these agreements, which might differ from the values published in the above tables. Interconnections can represent either an entry or an exit point when transporting gas through more than one pipeline system under which tariffs have an 80pc discount.

BRAZIL NATURAL GAS MIDSTREAM

Natural gas tariffs for retail industrial consumers

R/m<sup>3</sup>



\*Every Brazilian state listed in the above map has set a minimum volume of natural gas that industrial companies must consume in order to be allowed to buy directly from producers or trading companies. Any company consuming natural gas below these set volumes are considered 'retail consumers' and must buy their gas from their local distribution company at the tariffs determined above. These tariffs can vary on a monthly or quarterly basis and Argus will be updating them accordingly. The states not listed in the above map have yet to determine their minimum volumes/tariffs for retail industrial consumers.

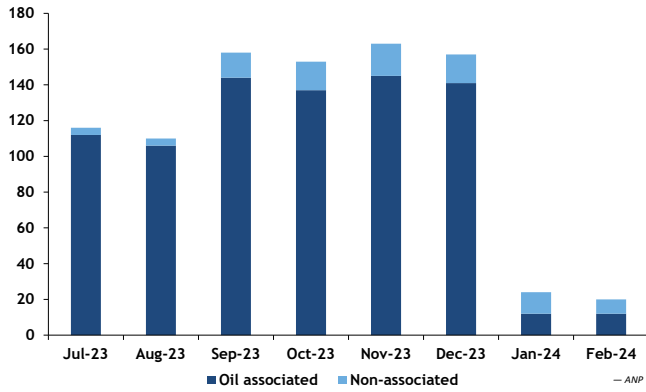
Dashes indicate the information was not provided with the taxes, while "na" reflects the price was not published in time to be included.

Values represent fixed (where applicable) plus variable costs strictly for the consumption range (different by company), which the denoted consumption level is in. They don't represent the total tariff cost for the denoted consumption level.

FUNDAMENTALS

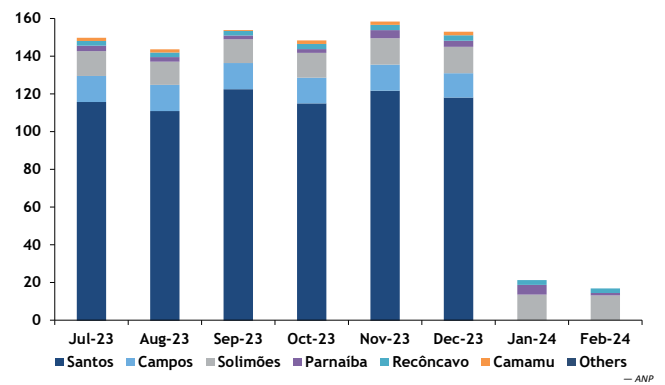
Natural gas production

mn m<sup>3</sup>/d



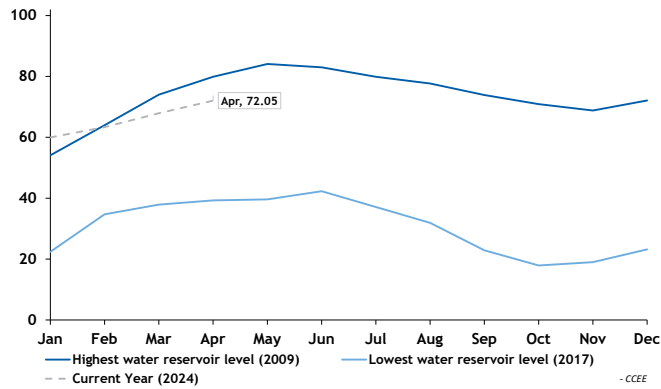
Natural gas production per basin

mn m<sup>3</sup>/d



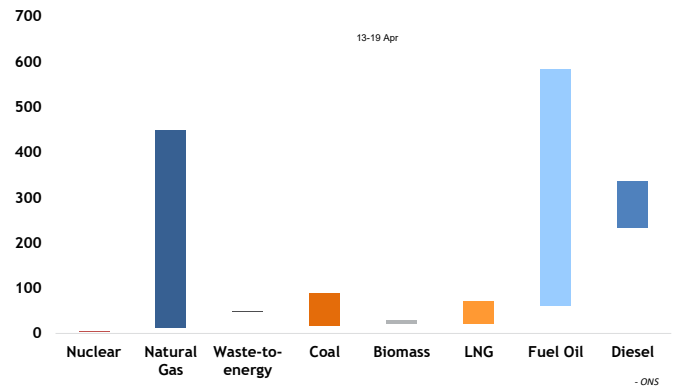
Water reservoir levels for hydropower generation

%



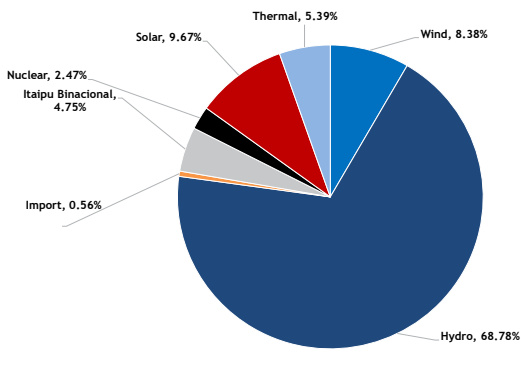
Unitary cost of power generation per source

\$/MWh



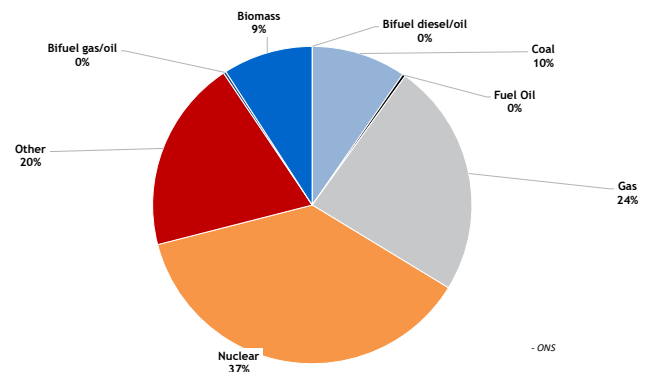
Power load per source

MW avg



Thermal generation per type of fuel

MW avg



Oil and gas regulator ANP's website and systems remain offline following a cyberattack, so no data is available for this issue.



## NEWS

### Piaui targets green H2 for domestic industry

Brazil's northeastern state of Piaui aims to become a leading hub for renewable hydrogen production with a view to primarily supplying domestic industry, such as the agricultural sector, its governor Rafael Fonteles has told *Argus*.

With vast potential for solar and wind energy generation, northeast Brazil has been touted as one of the most promising hubs for [production of renewable hydrogen](#). The state of Ceara, and especially its port of Pecem, has emerged as a frontrunner for project announcements in Brazil, but its neighbour Piaui has recently seen traction and is eager to attract more developers.

"We're not looking for pilot projects," Fonteles told *Argus*. "Our focus has been on bringing large industrial projects" to the state, he said. Discussions with potential partners are targeting projects with electrolyser capacities of around 1GW each.

Spanish renewables company Solatio [recently announced two large projects in Piaui](#), with a combined electrolyser capacity of nearly 2.4GW. Estimated investment in Piaui's hydrogen sector is currently at 50bn Brazilian reais (\$10.2bn), according to Fonteles. The state is eager to grow the pipeline, with Fonteles touring Europe to speak to potential developers in Spain, Germany, the UK and Sweden.

### Comparative advantage

Piaui "offers the best conditions for green hydrogen production in all of South America," according to Fonteles. While renewables have an 80pc share of Brazil's energy mix, they account for all the energy generated in Piaui, he said. The state produces three times the energy it consumes, which will soon increase to five times, he said.

Many projects announced in Brazil are targeting potential exports, but Piaui has a comparatively short coastline and hydrogen produced there could be primarily used domestically, such as in agriculture. Piaui is the one of the four states that make up Brazil's agricultural frontier, known as Matopiba, where a large part of the domestic industry, including [soybean and livestock farming](#), is located.

Industry participants have previously said that green hydrogen producers could target ammonia supply to the domestic market, as Brazil's agricultural sector imports 85pc of [its fertiliser needs](#).

Solatio is among the firms eyeing Piaui's fertiliser market with the larger of the two recently-announced projects, which could produce 1.2mn t/yr of ammonia. Another potential application for renewable hydrogen could be steelmaking, according to Fonteles. Piaui is rich with iron ore minerals, which are mined in places such as the city of Piripiri, he said.

### Infrastructure revamp

Piaui, like other regions, faces challenges on the way to realising its renewable hydrogen ambitions, including the need for a build out of transport infrastructure. Fonteles said upgrading this is a priority – not least to also enable some exports of renewable hydrogen and ammonia or other green products.

The state's first port is due to open in December and could facilitate exports, especially to European markets, Fonteles said. With prospects for export of green steel products, development of a rail corridor between Piripiri and the port is on the cards, he said.

Developments on a federal level may also be crucial for Piaui's hydrogen progress. Fonteles is not concerned about the pace at which Brazilian lawmakers are developing a framework, although some stakeholders have said Brasilia is moving too slowly. Representatives from several Brazilian states [recently called on the government](#) to present a strategy for driving the hydrogen industry forward.

*By Pamela Machado*

### Solatio plans H2 and green ammonia in Brazil

Spanish renewables company Solatio plans to develop a large-scale renewable hydrogen and ammonia project in Brazil's northeastern state of Piaui, aiming to achieve 11.4GW of electrolyser capacity.

The venture will be delivered in six phases of 1.9GW each, with plans to start operating the first phase from January 2028, the company said. Subsequent phases are timetabled to be delivered around every two years, to reach completion by January 2038.

The project will be located at the Parnaiba exporting zone, next to the port of Luis Correia. Solatio is in the process of securing the necessary licences, and expects to begin construction in October. Output will serve domestic demand and exports, Solatio said, but no buyers have been secured yet.

Once completed, the hydrogen and ammonia plants will require around 50GW of solar energy, according to Solatio, given that solar plants are not generating power 100pc of the time. Solatio plans to build 25GW of solar energy in the Parnaiba zone, and additional energy will be sourced from solar plants in Piaui and other states. The company has a combined 21GW in developed projects and boasts "sufficient financial capacity to implement both the hydrogen project and all the plants necessary to generate clean energy" to cover the needs of the project, it said.

The initiative will require 100bn Brazilian reais (\$19.7bn) over the next 10 years in what would be the largest invest-

ment ever announced in the state, according to Piauí's governor Rafael Fonteles.

Piauí is set to host another large-scale renewable hydrogen project at the Parnaíba exporting zone, the 10GW venture led by [European group Green Energy Park](#), which is expected to receive support from the EU.

### New hydrogen hub?

Piauí is a neighbouring state to Ceará, home to the Pecém industrial complex that has taken a leading role in kick-starting the hydrogen [scene in Brazil](#). The Piauí government shows strong determination to challenge Ceará's position and to attract large sums of investments in renewable hydrogen projects into its jurisdiction.

Several project developers, including Australia's Fortescue, are targeting projects for exports from Pecém, although none have reached the scale of the two initiatives envisioned in Piauí so far. That said, large-scale projects in Ceará and in Piauí are still in early stages.

Piauí's plans to become a hub for production of renewable hydrogen has gathered "support from the EU and strategic partnerships around the world," Fonteles said. Indian conglomerate group Hinduja has expressed interest in "establishing connection" with hydrogen projects in the state, the governor said during a trip to India last month. Fonteles also travelled to Australia recently where he met with the Western Australian investment and trade agency and fertiliser company Yara Pilbara to discuss partnerships in the sector.

By Pamela Machado

### Mitsui forms biomethane JV in Brazil

Japan's Mitsui Gas and Brazilian biogas company Geo Biogas & Carbon have formed a joint venture to invest in renewable hydrocarbons.

The new company, dubbed GeoMit, plans to build and operate biomethane plants that use the by-products of sugar and ethanol production as feedstock. GeoMit will work to develop partnerships with sugarcane mills interested in supplying biomass to its plants.

The goal is to guarantee year-round biomethane supply to consumers by taking advantage of the abundant biomass produced by Brazil's agricultural sector.

Mitsui has been actively seeking to expand its renewable energy investments in Brazil. The company is exploring joint investments [with state-controlled Petrobras](#) in low-carbon energy, including biomethane.

Geo has partnerships with Brazil's biggest sugar and ethanol producer Raizen, as well as other large mills, including Cocal in São Paulo state, Coopcana in Paraná state and UISA in Mato Grosso state.

### Atvos to produce sugarcane-based biomethane

Brazilian sugar and ethanol producer Atvos will invest R350mn (\$68.9mn) in a biomethane plant in central-western Mato Grosso do Sul state as part of a growing trend in the sector to produce the renewable gas.

The plant will have production capacity of 28mn m<sup>3</sup>/harvest and will be at Atvos' Santa Luzia mill, in Nova Alvorada do Sul, in Mato Grosso do Sul. The plant will use by-products from sugar and ethanol production as feedstock.

Brazil's sugarcane harvest takes place from April-March.

Atvos will use a share of its biomethane output in its own fleet, reducing diesel consumption. The remainder will be sold to consumers in surrounding cities.

Construction of the plant is scheduled to begin later this year at the mill, which crushes 5.5mn metric tonnes (t)/yr of sugarcane and produces nearly 500mn l/yr (8,620 b/d) of ethanol.

Atvos is the second sugar and ethanol producer in Mato Grosso do Sul state to invest in biomethane. [Agricultural conglomerate Adecoagro](#) produces biomethane at its Ivinhema mill in the state.

Other sugar and ethanol companies, including Raizen and São Martinho, are [also investing in biomethane production](#), which helps lower their mills' carbon footprints, allowing them to issue more Cbio carbon credits.

Brazil is expected to more than double biomethane production capacity this year with the addition of 13 plants, according to data from the hydrocarbons regulator ANP.

### PetroReconcavo to supply gas to GNLink

Brazilian oil and natural gas producer PetroReconcavo will supply gas to small-scale LNG distributor GNLink, expanding distribution across northeastern Brazil.

GNLink will build a gas liquefaction and compression unit at PetroReconcavo's Carnaúba gas collection facility in Rio Grande do Norte state. The distributor will also be responsible for storing, liquefying and decompressing the gas.

The 10-year contract stipulates that PetroReconcavo will supply 100,000 m<sup>3</sup>/d of gas from its fields in the Potiguar basin starting in 2025. It comes as PetroReconcavo struggles with midstream infrastructure outages, which has limited gas output.

GNLink has been expanding small-scale gas distribution across Brazil and is investing in liquefaction and compression units in Bahia and Paraná states. Each facility will have 196,000 m<sup>3</sup>/d of gas-processing capacity. Both are scheduled to begin operating in the third quarter.

The move is part of a broader trend among Brazilian gas distributors, which are increasingly turning to small-scale distribution to expand into regions [without gas pipeline infrastructure](#).

### Compass LNG terminal begins commissioning

Brazilian natural gas trading and distribution company Compass began commissioning last week of its Terminal de Regaseificacao de Sao Paulo (TRSP) LNG regasification on the coast of southeastern Sao Paulo state.

The terminal will have regasification capacity of 14mn m<sup>3</sup>/d and storage capacity of 150,000m<sup>3</sup> when fully operational later this quarter. Compass has a 10-year [charter agreement](#) with Hoegh LNG holdings for the 170,000m<sup>3</sup> *Hoegh Giant*, which is operating at the terminal.

Compass subsidiary Edge is marketing gas from the terminal and began trading LNG last year. It reported selling 20 trillion BTUs of gas from July-December and plans to expand LNG sales on the wholesale market.

The terminal is the third to begin operating in Brazil this year, helping to further diversify gas supplies to Sao Paulo, Brazil's largest natural gas market.

Global power and LNG company New Fortress Energy began operating its Gas Sul LNG terminal (TGS) in [Santa Catarina state](#) and its LNG Barcarena terminal in [Para state](#) earlier this year.

### 3R, Enauta advance merger

Brazilian oil independent 3R Petroleum has agreed to move ahead with a merger with Enauta, highlighting ongoing consolidation in the country's oil and natural gas sector.

The companies signed last week an exclusive memorandum of understanding (MOU) to finalize the merger's terms, 3R said. 3R shareholders will receive 53pc of the new company, which was stipulated in Enauta's 1 April proposal.

3R is also working on an agreement with Swedish energy company Maha Energy to swap its 15pc share in its subsidiary for a 2.17pc stake in 3R. The share-swap agreement aims to simplify the shareholder structure.

The combined assets of the companies would have production of 100,000 b/d of oil equivalent (boe/d), with the potential to "significantly increase" production in five years, based on the two companies' combined reserves of 770mn boe, according to Enauta estimates.

3R reported oil and gas production of almost 44,400 boe/d in the first quarter, which is more than double its output in the first quarter of 2023, when it produced 20,690 boe/d.

Enauta produced 25,500 boe/d in the first quarter, a 61pc rise from the same period of last year, it said.

### Gas transporters offer short-term capacity

Brazilian natural gas transport companies Transportadora Brasileira Gasoduto Bolivia-Brasil (TBG) and Nova Transportadora do Sudeste (NTS) are offering short-term transport contracts on their respective gas transport grids.

TBG is holding its fifth open season tender for short-term natural gas transport contracts for 2024 for its 2,593km (1,610-mile) Gasbol pipeline.

Gas producers, suppliers and consumers can bid for daily, monthly and quarterly contracts through [the capacity offer website](www.ofertadecapacidade.com.br), which is jointly managed by Brazil's three gas transport companies TBG, TAG and NTS.

The offer will take place in three phases, with bidding for quarterly contracts taking place on 15 April and bidding for monthly contracts on 24 April. The company will also receive bids for daily contracts on 29-30 April.

NTS also announced changes to the bidding process for daily contracts last week through the capacity offer website.

### Compagas to expand distribution

Brazilian natural gas distribution company Compagas is expanding its network into the northern region of Parana state, with the goal of increasing supply to the industrial and transport sectors.

The company will invest R80mn (\$16mn) to begin distributing gas in the second half of 2025. Compagas will initially focus on industrial clients in the city of Londrina, with the goal of expanding into the vehicular and residential markets. The company plans to expand to surrounding cities, with the construction of roughly 30km (18.6-miles) of new pipelines.

The construction of new distribution infrastructure is one of the requirements of Compagas' 2023 concession renewal.

With the expansion of gas distribution, the Londrina city government plans to adopt policies to increase the use of natural gas as transport fuel. Compagas has already conducted tests using biomethane to replace diesel fuel in the Londrina bus fleet.

Compagas will also be working to bring biomethane distribution to the region, as part of its larger plans to distribute roughly 100,000 m<sup>3</sup>/d of biomethane by 2026.

The company currently distributes 2mn m<sup>3</sup>/d of gas to over 54,000 clients through its 880km network.

### Global gas prices slide against oil

Global gas and LNG benchmarks held broadly stable in recent days but reduced their discount against oil prices, which continued to rise steadily.

The front-month contract at the Dutch TTF gas hub slipped to \$8.84/mn Btu on 8 April from \$9.03/mn Btu a fortnight earlier, while the *Argus* Northeast Asia (ANEA) front half-month des price rose slightly, to \$9.37/mn Btu from \$9.16/mn Btu. But both reduced their values compared with corresponding Brent prices, to 9.8pc and 10.4pc, down respectively from 10.5pc and 10.7pc.

Spot gas prices are now competitive with most oil-linked

slopes in long-term LNG contracts indexed to Brent, with prices under such contracts set to rise further in the coming months as the most recent increases in oil prices filter through the indexation formulas. Spot LNG prices in Asia are now equivalent to oil-linked prices with a 11.5-12.0pc slope for contracts with a three-month price formation period and 10.5-11.0pc for contracts with a six-month formula.

European prompt prices were supported somewhat by some upstream Norwegian production constraints in the past two weeks. But a warm start to April has still allowed for a switch to storage injections across the EU. Exceptionally weak heating demand has driven down space heating demand and pushed TTF prompt markets further below the third-quarter 2024 contract, incentivising firms to start injections early despite high stocks.

LNG prices for delivery to Europe tightened their discount to corresponding hub prices, reflecting stronger competition from buyers in other basins. The prospect for early-summer cooling demand in some Asian markets, coupled with the late-winter stockdraw at some Japanese terminals leaving space for summer purchases, has offered support to the broader Asian LNG market, drawing supply from the Atlantic basin.

But the inter-basin LNG price differential did not widen enough to drive substantial diversions, despite these requiring only a relatively narrow premium because of persistently low prompt spot charter rates. LNG charter rates have fallen back to levels seen in early March, after an uptick at the turn of this month, with the exception of the inter-basin *Argus* Round Voyage (ARV3) rate, which expanded its premium to Atlantic and Pacific intra-basin rates, reflecting greater interest in Atlantic-Pacific cargo flows.

In the US, an early-April cold spell provided support to prompt and near-curve gas prices. Nymex gas for May delivery at the Henry Hub settled at \$1.844/mm Btu on 8 April, up by 4.6pc from the end of March. But stocks remain much higher than in recent years, after exceptionally slow withdrawals over the past winter.

### Limited growth for natural gas in LatAm: IEA

There is limited scope for growth for natural gas in Latin America, with the exception of Argentina, the IEA said.

The region produces 5pc of global natural gas and was a net importer of the resource. The IEA forecast that the region will remain an importer with production set to decline by 2030, under current policies.

“We don’t see a lot of natural gas growth in Latin America [as a region], except for Argentina, but that will take time,” said Tomas de Oliveira, energy and environmental policy analyst at the IEA said at the Madrid Energy Conference last week in Spain. “But there is opportunity in hydrogen and biofuel,” he added.

If climate pledges and targets are met in full, including those to reduce flaring and methane emissions, natural gas production will decline steadily but demand will fall faster, particularly after 2030, reducing import needs by 30bn m<sup>3</sup> in 2050 from current levels, he said.

Argentina is seeking to be a large exporter of LNG given its enormous resources at its Vaca Muerta shale field that has 308 Tcf in natural gas, according to the US Energy Information Administration.

Companies like *YPF*, *Malaysia’s Petronas* and *Tecpetrol* have shown interest in developing LNG infrastructure for exports there. They are waiting for approval of a law that would allow for 30-year contracts to export LNG and tax incentives for large-scale investments, such as LNG export terminals.

“We see that the natural gas market in 10 years will be crowded and there will be little space for competition,” de Oliveira said. “The energy landscape is changing and the role of natural gas will change so if you are thinking of long-term projects, I’d be careful,” he added.

*By Jacqueline Echevarria*

### Petrobras finds more oil in Equatorial Margin

Brazil’s state-controlled Petrobras has made another oil discovery in ultra-deep waters of the Potiguar basin in the country’s environmentally sensitive Equatorial Margin.

The company found an oil accumulation in block POT-M-762 following the drilling of the Anhangá exploration well, which is close to the border between the northern states of Ceara and Rio Grande do Norte, in a water depth of 2,196 meters (7,205 feet).

Petrobras made its first discovery in Potiguar earlier this year in the Pitu Oeste well, in the BM-POT-17 concession, approximately 24km (15 miles) from Anhangá. Petrobras operates both concessions and holds a 100pc stake.

The Equatorial Margin – composed of the Foz do Amazonas, Para-Maranhao, Barreirinhas, Ceara and Potiguar offshore basins – is considered one of the most promising areas in Brazil for oil and natural gas production, as it may have similar geological characteristics as large offshore discoveries in Suriname and Guyana.

Environmentalists say the region, near the mouth of the Amazon River, has a high amount of unexplored biological diversity, and they have sought to block exploration activities.

Brazil’s environmental agency Ibama rejected Petrobras’ request to drill an exploration well in Foz do Amazonas last May, citing a lack of an in-depth study, but approved the Potiguar drilling in October.

The Equatorial Margin is Petrobras’ main plan to replenish gradually declining pre-salt reserves off the country’s southeastern coast.

The company has earmarked \$3.1bn for the Equatorial Margin in its 2024-2028 strategic plan, out of a total \$7.5bn budget for exploration and production.

By *Eléonore Hughes*

### Brazil ups forest preservation funds

Brazil's government announced new funding to reduce deforestation in the Amazon basin and to support investments in renewable power to speed up decarbonization of its economy.

The new funding will direct R730mn (\$142mn) to 70 municipalities in the Amazon basin that were responsible for nearly 78pc of deforestation in the region in 2022.

So far, 53 municipal governments have agreed to participate in the program, which foresees bonus payments depending on the success in reducing deforestation. The program will also create 30 municipal fire brigades that will be responsible for preventing and combating forest fires.

Of the total funding, R600mn will come from the Amazon fund and R130mn from the Floresta+ program, headed by the environment ministry.

Municipal governments that agree to participate in the program will receive federal-government support for reforestation projects and land title grants to small property-holders in the forest.

The government estimates that up to 30,000 households will receive payments for protecting the forest.

The new program is part of a broader government policy to reduce deforestation. In the first quarter of 2024 the rate of deforestation in Brazil's Amazon basin fell by 40pc from a year earlier. Deforestation in the Amazon in 2023 fell by 50pc from 2022.

The government also issued a presidential decree earlier last week to extend grid-fee discounts for wind and solar projects by 36 months. The decree will apply to roughly 30GW of wind and solar capacity, according to government estimates.

The decree comes amid growing concerns about rising electricity costs in Brazil. The extension of the grid-fee exemption has been criticized by some consumer advocacy groups that say it will cut revenues by roughly R4.5bn, which will then be covered by all consumers connected to the grid.

### Argentina seeks further LNG cargoes

Argentina's state-owned Energia Argentina (Enarsa) has issued a tender seeking 10 partial LNG cargoes for delivery in June-August to the country's Escobar import terminal through a tender closing on 16 April.

The firm is seeking three June cargoes, six July cargoes and one August cargo (*see table*). The firm typically seeks cargoes sized 2.1 trillion-2.7 trillion Btu, around 40,000-52,000t, because of draught restrictions around Escobar.

This follows the firm buying 10 cargoes for earlier in the austral winter at a premium to the Dutch TTF gas hub of around 50¢/mn Btu, market participants said. Seven cargoes were awarded to Glencore, with three to TotalEnergies, they added.

Offers were higher than typical elsewhere in the Atlantic basin because of the higher credit risk associated with delivering to Argentina, market participants said.

Enarsa bought 44 cargoes last year, but remarketed some cargoes back to the spot market, likely as domestic gas output increased and renewables generation jumped, and the Nestor Kirchner gas pipeline linking capital Buenos Aires to the Vaca Muerta formation was brought on line.

The firm bought 32 of the cargoes for delivery to Escobar last austral winter, suggesting the terminal has capacity to receive more cargoes in the coming months, if needed. But the country's second LNG terminal, at Bahia Blanca, is not on line this summer.

By *Martin Senior*

### New omnibus bill in Argentina adds LNG focus

Argentina's government left many of the same proposals to ease limits on oil and natural gas markets in its pared-down version of a sweeping omnibus bill to address the economic crisis, and added incentives for LNG.

The new draft presented on Tuesday includes 56 articles to change existing oil and gas legislation among the 279-article bill. The original version, submitted last December, included 664 articles, with more than 100 related to the energy sector.

President Javier Milei's government wants to get the legislation through the 257-member chamber of deputies before the end of April as part of a deregulation plan to jumpstart the economy.

Argentina's economy contracted by 1.6pc last year and is forecast to shrink by as much as 2.5pc this year. Annualized inflation through February was 276pc.

The original version made it through the chamber in early February, but got caught up when lawmakers began voting down individual articles. The government decided to withdraw it and start over.

The new draft includes many of the same changes regarding oil and natural gas as in December, eliminating price controls and restrictions on the transportation, distribution and sale of fuels. It also maintains a few changes made since December, such as removing state-owned oil company YPF from the list of public enterprises that will be privatized fully or partially. The national electric company, Enarsa, remained on the privatization block, one of 18 companies the Milei's administration wants to sell. Up for partial privatization is the nuclear power company, Nucleoelectrica Argentina (Enace).



But the government [took out a full chapter of the draft](#) devoted to biofuels, including production and sale frameworks, as well as blending mandates for biodiesel.

As in December, the second draft also proposed creation of the new natural gas and electricity regulator that will replace two separate entities, Enre for electricity and Enargas for gas.

### Making way for LNG

The most substantial change in the revamped bill refers to LNG, which was mentioned in the original in general terms, but is given much more room in the new version.

The Milei government has become increasingly focused on LNG as a source of investment, including the possibility of inking a final deal with Malaysia's Petronas to build a \$10bn LNG facility using gas from the unconventional Vaca Muerta play, the second-largest in the world with 308 trillion cf in confirmed reserves, according to the US Energy Information Administration.

Article 199 in the new draft states that within six months of the bill's approval, the energy secretariat will certify long-term gas reserves to ensure "firm and uninterrupted natural gas supply for LNG export projects."

LNG facilities, whether onland or floating, will be granted 30-year contracts. The legislation states that once a contract is signed, projects will be allowed to export authorized volumes without "restrictions, reductions or redirection" of supply.

Companies could be authorized to partially or fully cede export volumes.

The new draft also maintains the new framework for tax and stability incentives for large-scale investments, which the government hopes will stimulate investment in oil and gas.

By Lucien Chauvin

### Argentina bets on ETS to boost decarbonization

The Argentinian government expects that launching an emissions trading scheme (ETS) will encourage the energy sector to decarbonize and help the country meet its climate commitments under the Paris Agreement.

"We [the government] want to intervene [in the energy markets] the least possible," deputy secretary for planning and energy transition Mariela Beljanski told *Argus*. "We hope that the introduction of a cap and trade [emissions] system will prompt businesses to switch to less polluting and cleaner fuels," she said on the sidelines of the Madrid Energy Conference in Spain.

The government of President Javier Milei in December proposed the creation of an ETS in its [first draft](#) of an omnibus bill that was passed in February by congress but then started to reject individual articles. Milei's government opted to withdraw it.

The new version submitted to congress earlier this week has removed proposals to boost the energy transition, including one related to a cap and trade ETS and another to biofuels mandates, a decision that was welcomed with confusion by the sector.

But the removal of those elements from the general bill does not mean the government is giving up, Beljanski clarified, adding that the implementation of an ETS will be done through a decree.

"We hope to start consultations with business and provinces in the next 8-10 months to find a fair and transparent mechanism," Beljanski said. Although the process is in early stages, the government hopes to have an ETS up and running in two years.

"We will assign emissions allowances to every sector of the economy to comply with 2030 targets and monitor transactions in the ETS to quantify the emissions inventory but we will not intervene in the market," she added. Argentina in 2021 submitted a revised nationally determined contribution (NDC) to not exceed net GHG emissions of 349mn t of CO<sub>2</sub>e in 2030.

"Our intention is to grow our exports of energy fuels and we can do so by guaranteeing that our products are low emissions," Beljanski explained, adding that the inclusion of the ETS is also a more efficient measure to decarbonize the biofuels industry rather than by establishing blending mandates.

"If [international] markets are looking for bio products, producers will have to invest in ways to reduce their emissions," she said.

### LNG focus

The new version of the omnibus bill includes many of the same changes regarding oil and natural gas as in the draft proposed in December but the most substantial change in the revamped bill refers to LNG.

The Milei government has become increasingly focused on LNG as a source of investment, including the possibility of inking a final deal with Malaysia's Petronas to build a \$10bn LNG facility using gas from the unconventional Vaca Muerta play, the second-largest in the world with 308 trillion cf in confirmed reserves, according to the US Energy Information Administration.

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Companies could be authorized to partially or fully cede export volumes.

The new draft also maintains the new framework for tax and stability incentives for large-scale investments, which the government hopes will stimulate investment in oil and gas.

By Jacqueline Echevarria

## Colombia to loosen gas regs to up supply

Colombia will make regulations on offshore and some on-shore natural gas fields more flexible to begin production more quickly and address a potential gas deficit in 2026-2027, mines and energy minister Andres Camacho said.

The government will also allow Canadian oil company Parex to transport natural gas in a pipeline controlled by Cenit, state-owned Ecopetrol's transportation unit, and import gas from Venezuela, Camacho said at the Arpel-Naturgas Week conference in Cartagena, Colombia.

Parex would use the 50mn cf/d Banadia-Araguaney-Cusi-ana pipeline, Cenit's president Hector Manosalva told *Argus* on the event's sidelines. Gas production from Parex's Arauca gas field in eastern Colombia and others in the Llanos region will allow the company to supply central Colombia, he said.

Ecopetrol also signed a \$360mn agreement with Parex to explore for gas in the north of the department of Casanare, including the Llanos-4-1, Llanos 16-1, Llanos-121 and Siriri blocks. The areas have potential gas reserves of 1.8-3 Tcf.

Colombia also wants to take advantage of offshore gas volumes, Camacho said without naming the block.

Ecopetrol plans to invest \$760mn in 2024 to increase gas reserves and production, said president Ricardo Roa, with \$350mn of that focused on offshore. This includes drilling three new offshore wells: the Orca Norte 1 appraisal well finished in January; an appraisal well in the Uchuva 2 block in May to verify a 2022 discovery; and the Buena Suerte exploratory well in the Tayrona block in November.

Ecopetrol and the government are also negotiating with Venezuelan state-owned PdV to import natural gas through the 225km (139-mile), 500mn cf/d Antonio Ricaurte gas pipeline, Camacho said.

"We have been working with Ecopetrol to review the pipeline infrastructure to recuperate it," he said. "One kilometer on the Colombian side has been dismantled." The pipeline on Venezuela's side is intact, but industry sources [have said it needs maintenance](#) and Venezuela may not produce enough gas to export.

Ecopetrol has asked the US Treasury's Office of Foreign Assets Control (Ofac) to allow negotiations with PdV to start imports in December, but Washington has yet to make a decision, gas association Naturgas' president Luz Stella Murgas said.

Colombia's existing 260mn-300mn cf/d gas import contract with Venezuela expires in 2027. Roa said Colombia will not violate the OFAC restrictions, despite the need for gas.

Colombia may need to import 15pc of its natural gas demand by 2026 or 2027 unless new reserves are added.

By Diana Delgado



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