

Brazil

Gas Grid Expansion

The current model and
the road ahead

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The Roadmap



The New Gas Market



Defining the Grid



The Current Model: a lot of planning...



The road ahead



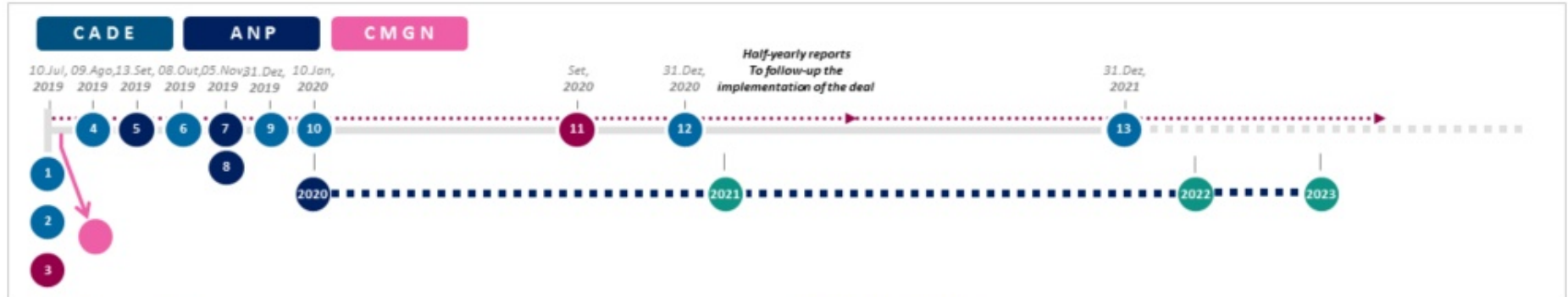
Final Remarks



The New Gas Market

PETROBRAS GAS ANTITRUST AGREEMENT

July 10 2019



- 1 **Upstream gas pipelines.** Negotiated access to upstream pipelines. In case of co-owned systems, the use of the infrastructure by third parties may be subject to different terms.
- 2 **Gas Processing Units.** Negotiated access to gas processing units. Until the ruling by ANP of the general terms of access, IRP's Guidelines shall be adopted.
- 3 **Upstream Gas.** Unless necessary due to technical, regulatory and operational reasons, Petrobras shall not purchase new gas volumes from upstream partners. Waivers must be previously required to CADE. The approval of a tax regime for the entry exit model is a condition precedent.
- 4 **Committee for Monitoring the Opening of the Gas Market.** Decree No. 9.934/19 created the committee to monitor the implementation of the measures to open the market and propose to CNPE additional measures
- 5 **Access Holidays.** Petrobras shall renounce exclusive rights to use TBG's, TAG's and NTS' pipelines.
- 6 **ANP Public Hearing.** ANP will conduct a public hearing regarding the disclosure of the Wholesale GSAs information.
- 7 **Contractual Congestion Management.** For NTS' and TAG's system, Petrobras shall indicate the maximum volume of gas injected and withdraw from each point of entry and each exit zone.
- 8 **Prohibition of destination clauses.** Wholesale GSAs cannot have destination clauses and to restrict the buyer to trade the gas in a secondary market
- 9 **LDC Wholesale Contracts.** ANP will disclose relevant information about the wholesale contracts entered by the LDCs.
- 10 **Gas Processing Units.** Petrobras must disclose to counterparts and to ANP the terms of the Gas Processing Agreements.

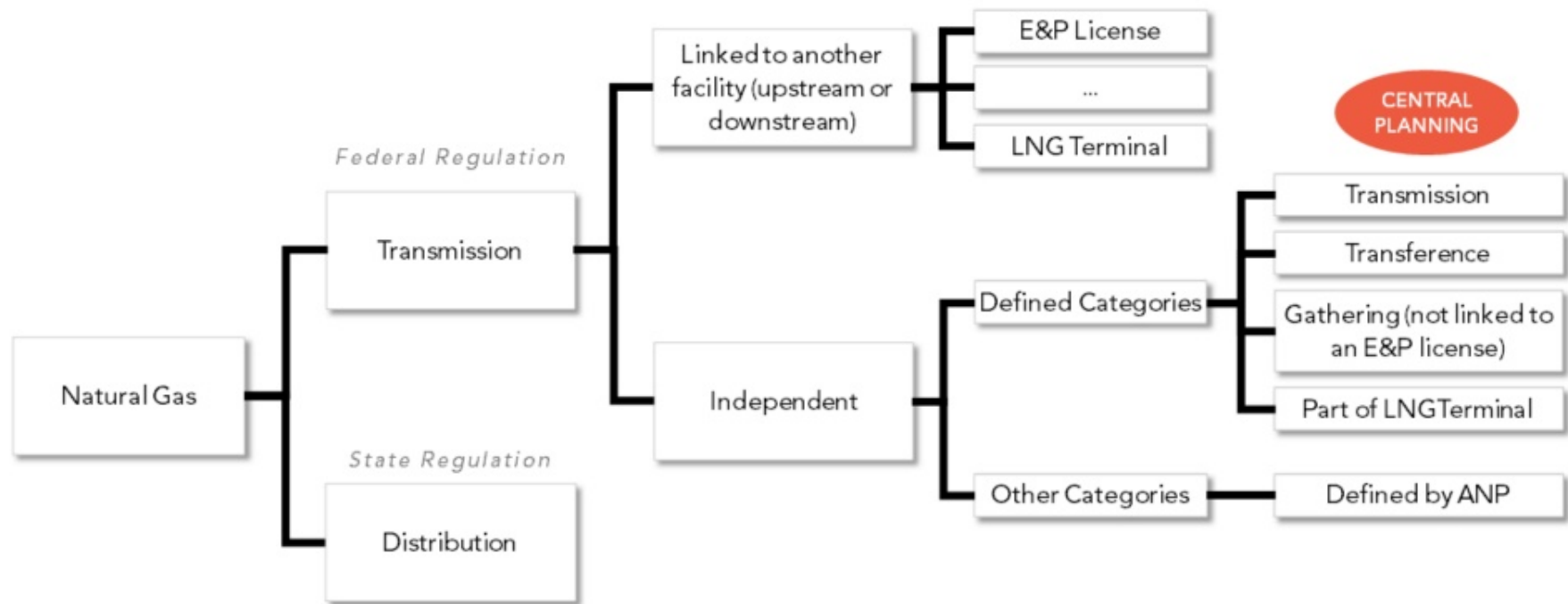
- RA **2020 Regulatory Agenda:**
 - ANP shall regulate the functional unbundling criteria for the TSOs;
 - ANP shall rule about the interconnection of transmission pipelines;
 - ANP shall review Ordinance No. 15/2014, which provides the criteria for gas transmission: tariff setting and review
- 10 **TSO's and GASPETRO Functional Unbundling.** While Petrobras' divestment in the TSOs and Gaspetro is not concluded, members of the Board of Directors nominated by Petrobras must comply with Novo Mercado rules of independence. Novo Mercado is one of the segments of B3's listing regulation with the highest corporate governance requirements.
- 11 **Leasing of Baía de Todos os Santos LNG Terminal.** Petrobras must publish the tender protocol for the leasing of the terminal until 31st December 2023. The approval of a tax regime for the entry exit model is a condition precedent.
- 12 **Divestment closing:** subject to certain conditions, the sales of Petrobras' interests shall occur until 31/12/2021. The deadline can be extended by CADE for one year.
- RA **2021 Regulatory Agenda:**
 - ANP shall regulate the guidelines for the drafting of the TSOs' Common Network Codes;
 - ANP shall review Ordinance No. 51/2013, which regulates the authorization for natural gas shippers
 - ANP shall review Ordinance No. 52/2011, which regulates the natural gas trade in the wholesale Market
 - ANP shall review Ordinance No. 37/2013, which establishes the criteria for transmission pipelines capacity extension;
 - ANP shall establish mechanisms for the TSOs to offset differences between collected and allowed revenues
- RA **2022 Regulatory Agenda:**
 - ANP shall review Ordinance No. 11/2016, which regulates the general conditions for non-discriminatory third party access to the transmission system
- RA **2023 Regulatory Agenda:**
 - ANP shall rule about third-parties access to LNG terminals conflict resolution mechanisms;
 - ANP shall establish the definition of the Natural Gas Transport System.



Defining the Grid

Natural Gas Pipelines' General Classification

✓ Not solved by the new model





The Current Model: a lot of planning...

1

Timeline

2

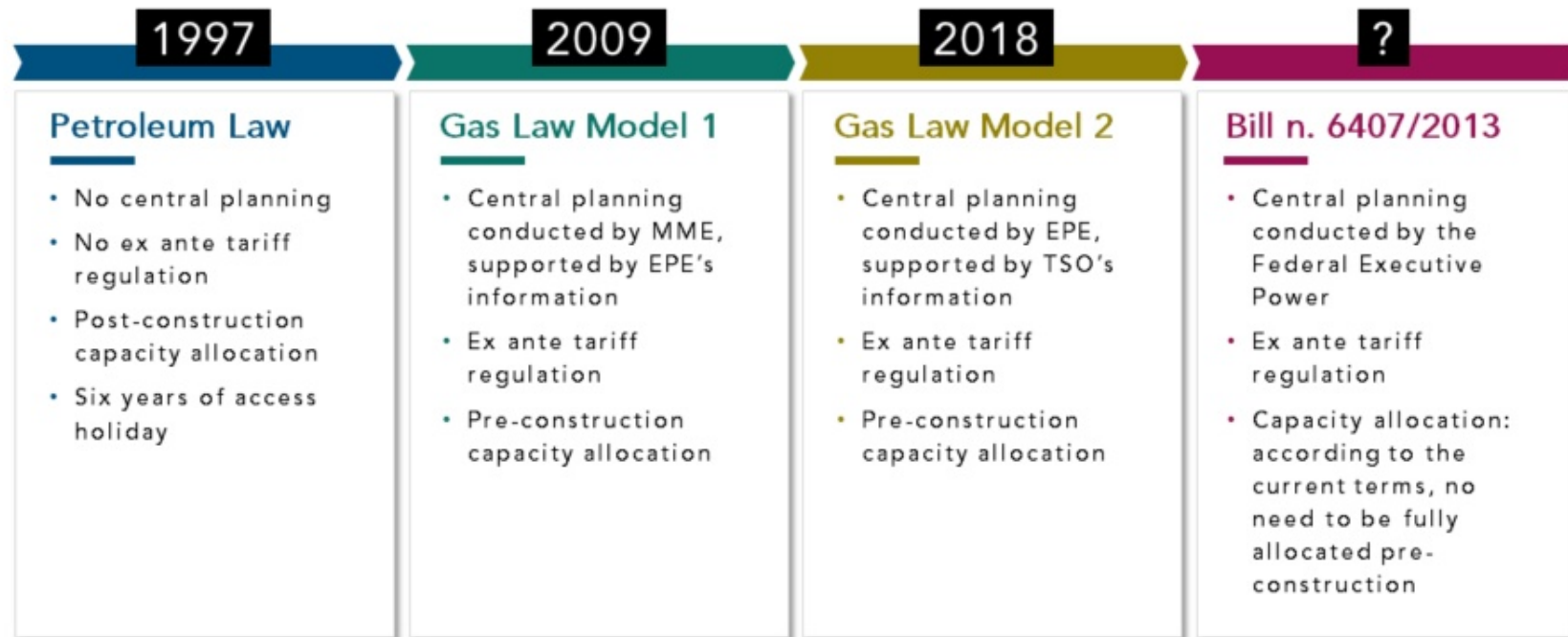
The numbers

3

From PEMAT to PIG

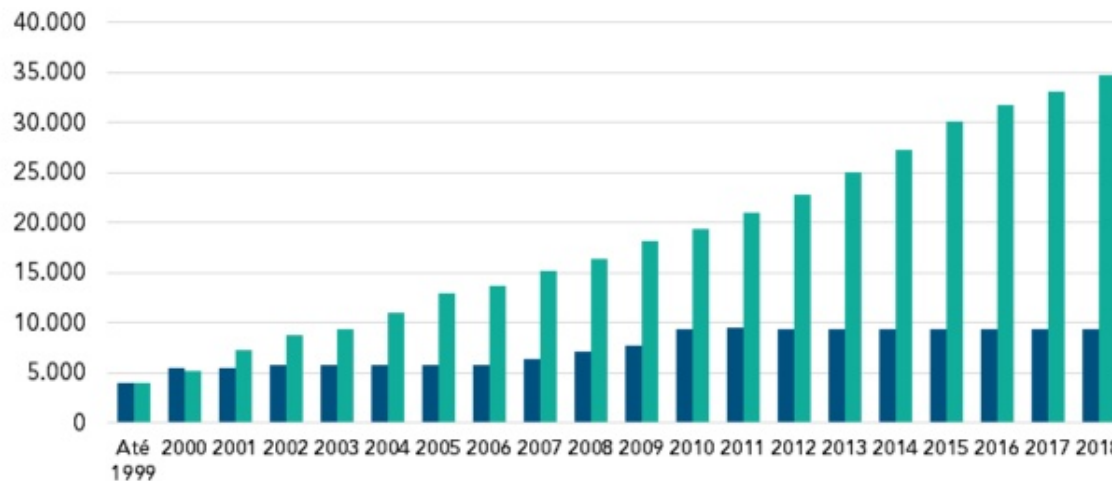
Timeline

Expansion of the Gas Grid Models



The Numbers

Evolution of Gas Transmission and Distribution



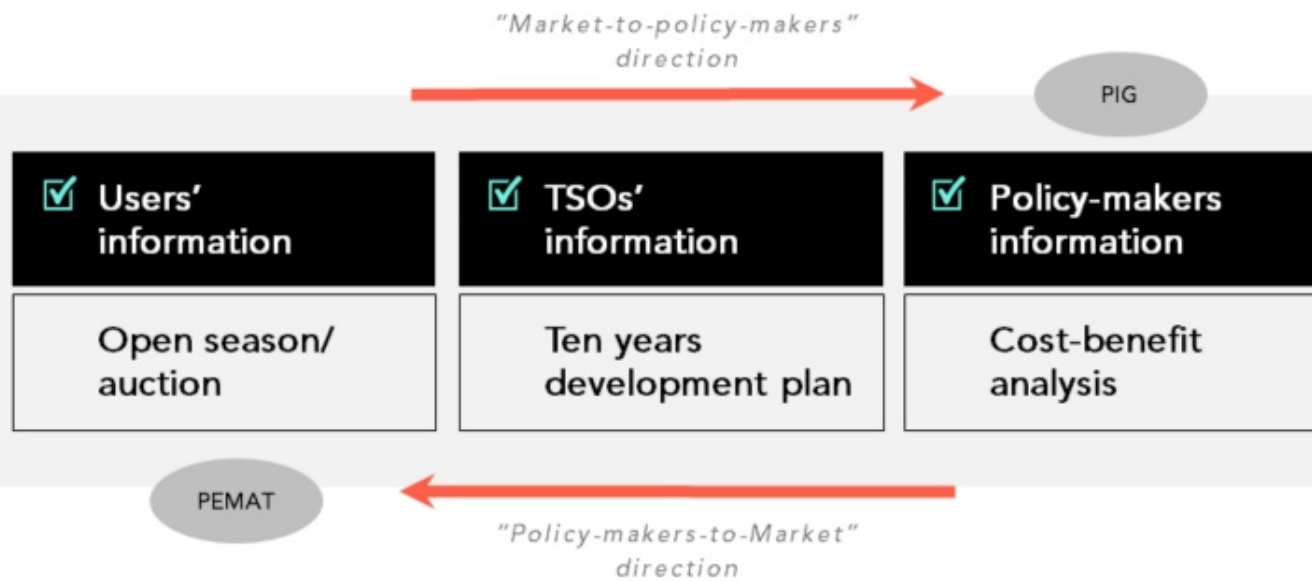
■ Transmission Gas Pipelines
Source: MME

■ Distribution Gas Pipelines
Source: ABEGAS

Source: Ministry of Mines and Energy Monthly Report

From 2009 on, the number of Transmission Gas Pipelines was stabilized, and the few variations was due to (i) pipelines reclassification; and (ii) grant authorizations made under the Petroleum Law Regime.

From PEMAT to PIG...



Source: Michelle Hallack and Miguel Vazquez. The construction of a European gas market: Network investment under virtual trading. In: Finger, M. (Ed.), Jaag, C. (Ed.). (2016). *The Routledge Companion to Network Industries*. London: Routledge, <https://doi.org/10.4324/9781315768984>.



The road ahead

1

Planning expansion

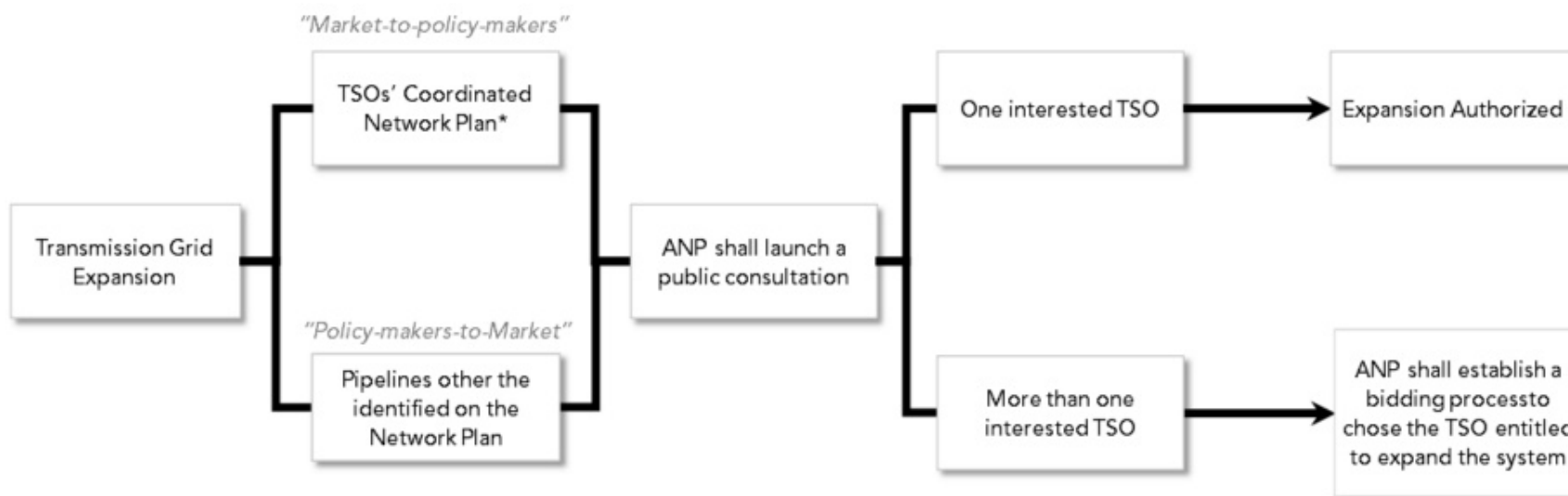
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Make it bankable

The road ahead

✓ Bill n.º 6.407/2013 model

Project and Allowed Revenue



*Will be coordinated by the Market Area Operator (in charge of coordinanting the TSOs of a certain market area operation)

Bankability

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- ✓ **Assets:** what happens to the assets and who pays for decommissioning?



Final Remarks

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- ✓ Pipeline classification matters and should be the starting point
- ✓ Wrong classification can lead to uncertainty and transactional costs
- ✓ Information flow is relevant to avoid unnecessary expansion
- ✓ User viable options should not be prohibited
- ✓ Bankability relies on clear rules for investment assessment and adequate return
- ✓ Define the balancing mechanism

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