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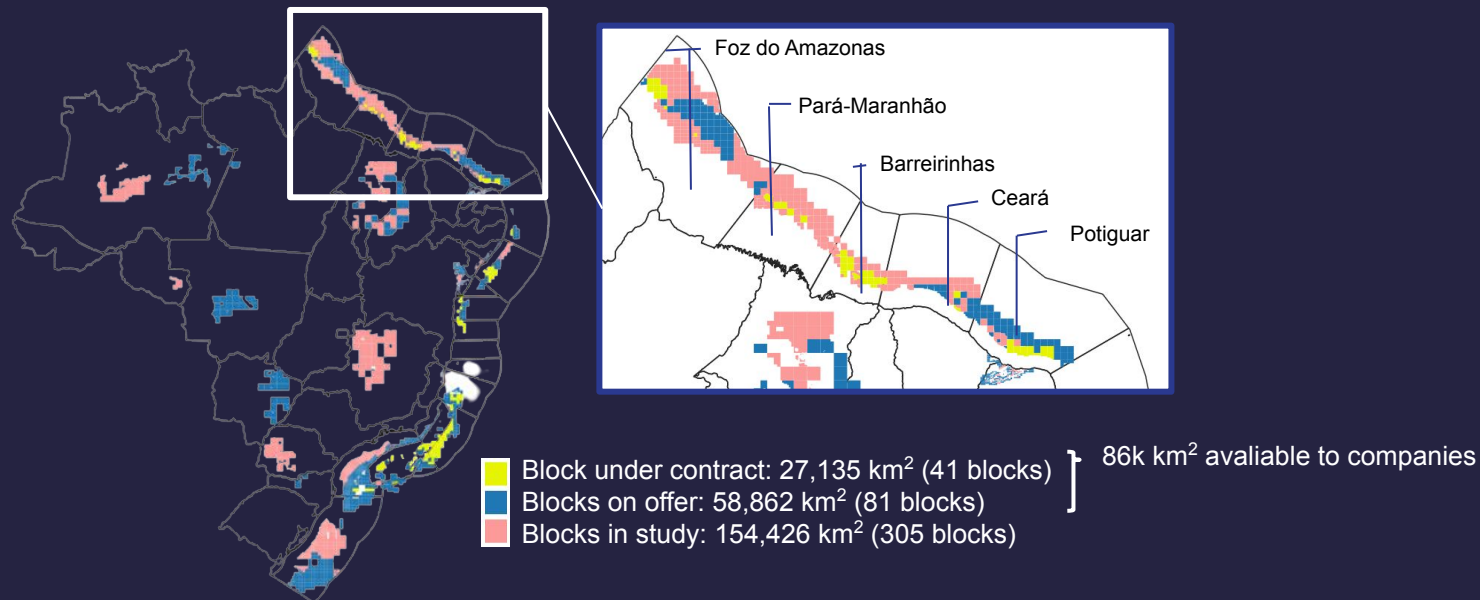
# Brazil: Oil and Gas impacts to climate, environment and transition

**Ricardo Baitelo**

Project Manager at Instituto de Energia e Meio Ambiente (IEMA)

# O&G exploration in sensitive areas

## O&G Exploration Blocks – Equatorial Margin



# O&G exploration in sensitive areas

## Amazon Mouth: War of narratives



Petrobras looking forward to explore block 59, located in the Foz do Amazonas Basin.

Largest Mangrove extension and one of world's biggest biodiversity corridors.

Ibama (Brazil's Environmental Regulator) denied license for exploration: studies regarded incomplete and Environmental Study of Sedimentary Area (EAAS) is requested.

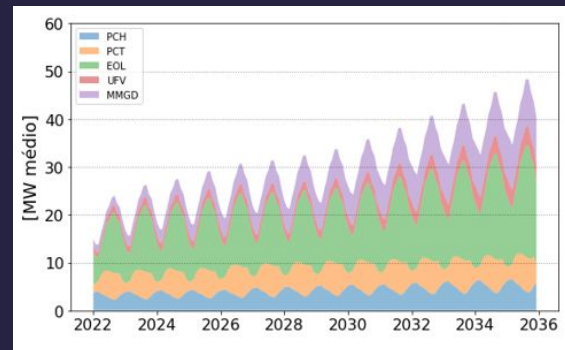
# Local and national impacts

## Technical and Economic Impacts of Gas Power Plants

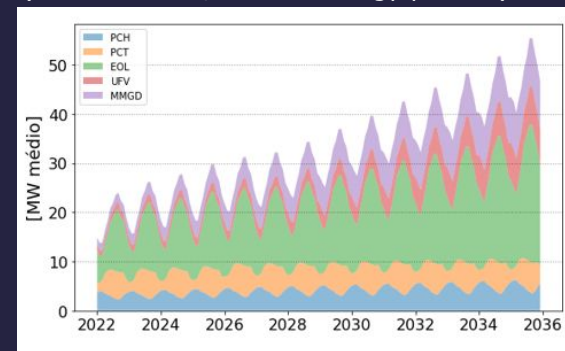
### Law 14.182/2021 - Impacts of Gas-Fired Thermal Power Plant Expansion

- Free Round Scenario without pro fossil fueled thermal plants policies: 36% less thermal generation.
  - ◆ Reference Scenario includes 12 GW of inflexible installed capacity
  - ◆ Free Round includes 5 GW of inflexible capacity
- Free Round Scenario: higher participation of solar fotovoltaics; Thermal costs are 47% lower (\$23 billion versus \$42 billion).
- The Marginal Operating Cost in the Reference Scenario is \$8,4/MWh compared to \$12/MWh in the Free Round.

**Reference Scenario**  
(PDE 2031 + Law 14.182/2021)



**Free Round**  
(minimum cost, without energy policies)

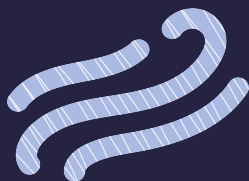


# Local and national impacts



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## Technical and Economic Impacts of Gas Power Plants



The historical dependence on fossil fuels creates vulnerabilities in the energy supply, especially during water scarcity crises.



The rising cost of electricity, driven by the use of domestic and imported gas, disproportionately affects low-income consumers, worsening social and economic inequality.

# Brazil's Climate Contradictions

Climate Change Performance Index 2024 – Rating table

Rank	Rank change	Country	Score**	Categories
1.*	–	–	–	
2.	–	–	–	
3.	–	–	–	
4.	0 –	Denmark	75.59	
5.	4 ▲	Estonia	72.07	
6.	6 ▲	Philippines	70.70	
7.	1 ▲	India ♠	70.25	
8.	5 ▲	Netherlands	69.98	
9.	-2 ▼	Morocco	69.82	
10.	-5 ▼	Sweden	69.39	
11.	-5 ▼	Chile	68.74	
12.	-2 ▼	Norway ♠	67.48	
13.	1 ▲	Portugal	67.39	
14.	2 ▲	Germany ♠	65.77	
15.	2 ▲	Luxembourg	65.09	
16.	3 ▲	European Union (27)	64.71	
17.	new	Nigeria ♠	63.88	
18.	5 ▲	Spain	63.37	
19.	2 ▲	Lithuania	62.99	
20.	-9 ▼	United Kingdom ♠	62.36	
21.	1 ▲	Switzerland	61.94	
22.	-2 ▼	Egypt	61.80	
23.	15 ▲	Brazil ♠	61.74	
24.	19 ▲	Romania	61.50	

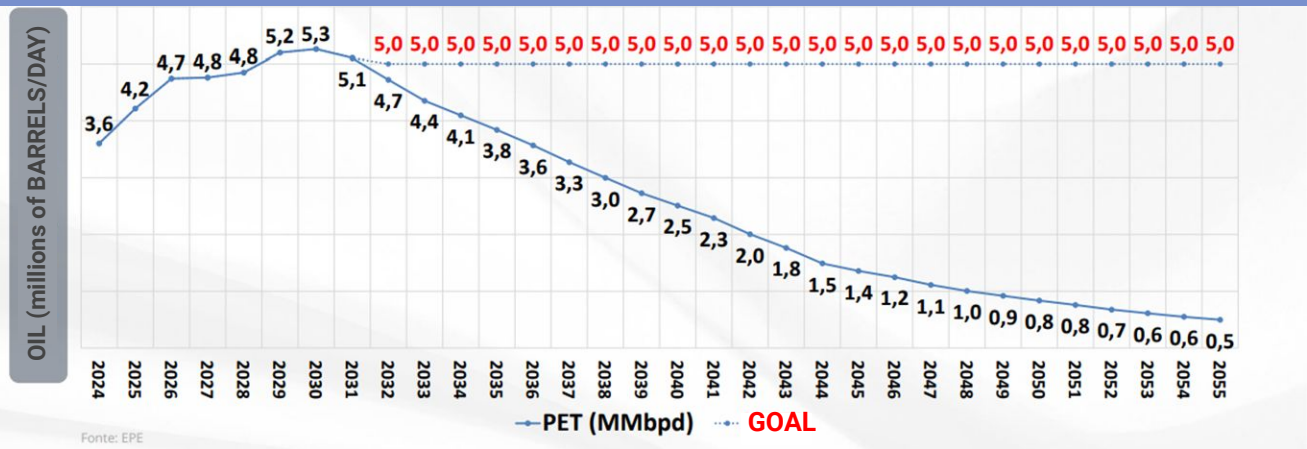
Brazil in 23rd position regarding climate policies and actions in 2023 - 15 positions higher than in 2022.

# Brazil's Climate Contradictions

Public Consultation 163/2024 on "Just, Inclusive, and Balanced Energy Transition"

## Forecast of Oil Production in the Investment Interruption Scenario in Exploration and Production

What happens to oil production in Brazil if we only advance in the development of discovered resources (total reserves and contingent resources)?



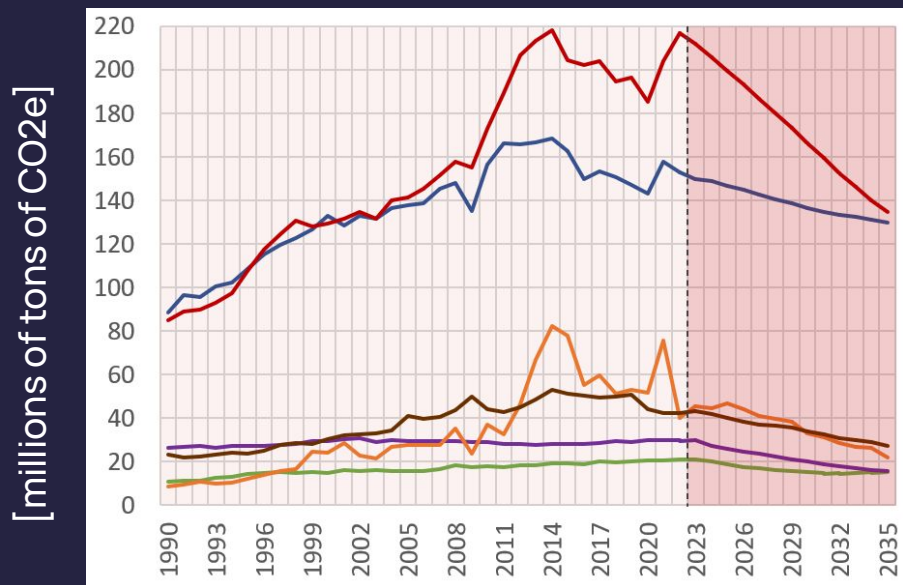
Fonte: EPE



# NDC (2030-35)

Climate Observatory Overall Proposal: 642 Mton CO<sub>2</sub> vs Official NDC BR 850-1,050MtonCO<sub>2</sub>

### Historical and Projected Emissions



### 2035 Results

### Δ 2022-35

Energy and PIUP (345 Mt)	-31%
Transport (135 Mt)	-38%
Industry (130 Mt)	-15%
Fuel Production (27 Mt)	-36%
Electricity Generation (22 Mt)	-45%
Buildings (16 Mt)	-48%
Animal Production (15 Mt)	-28%





# Thank you!

## *Brazil: Oil and Gas impacts to climate, environment and transition*

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# The case for reflecting Pemex's transition goals in Mexico's NDC

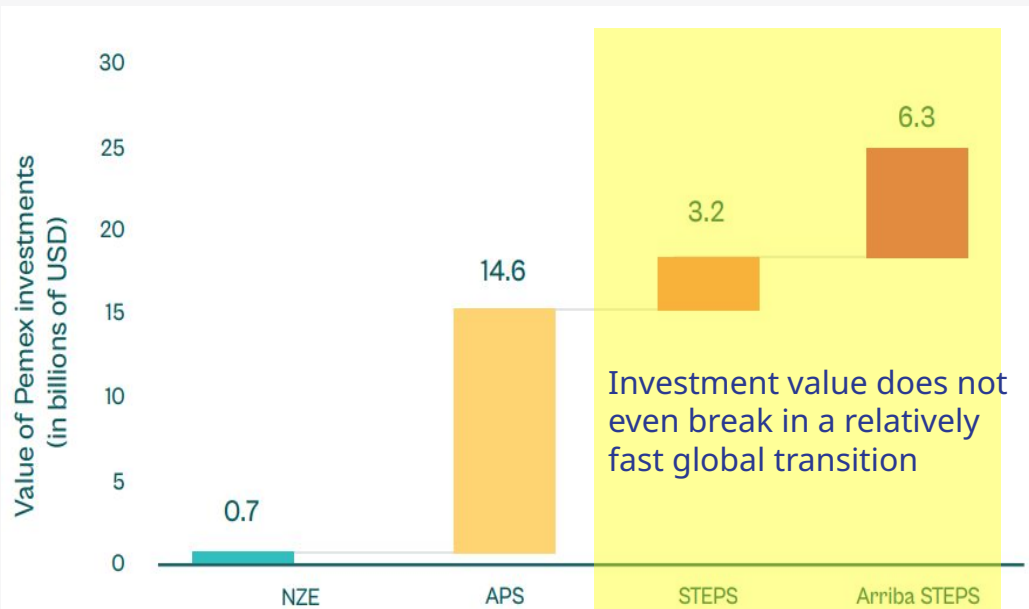
Fernando Callesteros

Country Manager, Mexico





# Transition risks: stranded value



Source: NRGi analysis based on Rystad Energy.



Pemex under the IEA APS scenario: \$10 billion in assets **would not reach the break-even point** (at 15% discount rate: \$28bn, 18% of govt expend).



**Pemex ranked #11** among the 58 NOCs with the **highest exposure to transition risk**



Pemex's contribution to **total government revenues drops from 18% to 3% in APS** (Carbon Tracker).



# Transition risks: Pemex is trapped in two feedback loops, bailout condition are an escape?

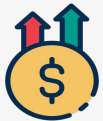
Conditions in Mexico that do not put Pemex in a good position to be the last one standing:



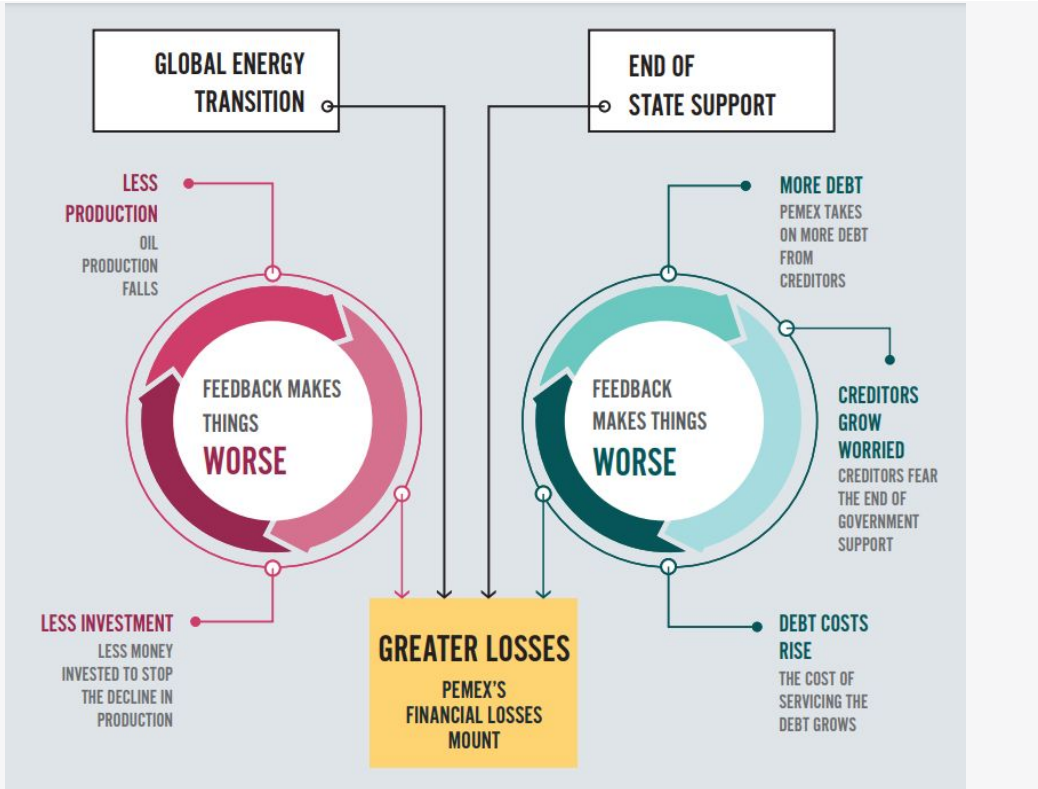
**Falling production**



**High debt**



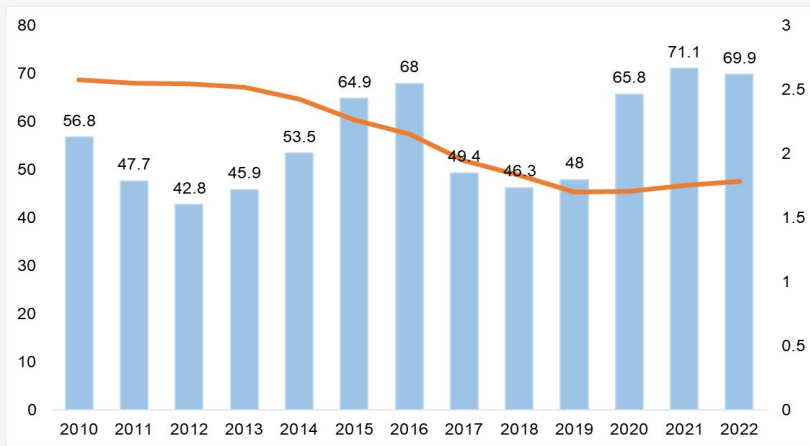
**High costs**





## Pemex's record on GHGs under self-sufficiency and increase of oil production

Scope 1 GHG emissions (MMtCO<sub>2</sub>e) and Pemex crude oil production.



Source: Pemex, response to freedom of information request number 330023823002978, received through the National Transparency Platform, June 15, 2023

### Pemex, CH<sub>4</sub> emisiones directas (Mt)



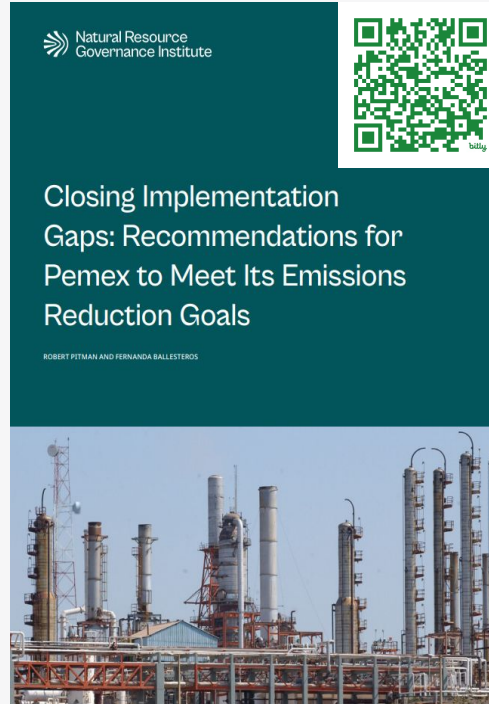
Source: Pemex, response to freedom of information request number 330023823002978, received through the National Transparency Platform, June 15, 2023

# Can Pemex become fit for the energy transition?

## Energy transition risks



## Emissions



## Coming soon...



Conditions for transferring resources to Pemex

\*work in progress



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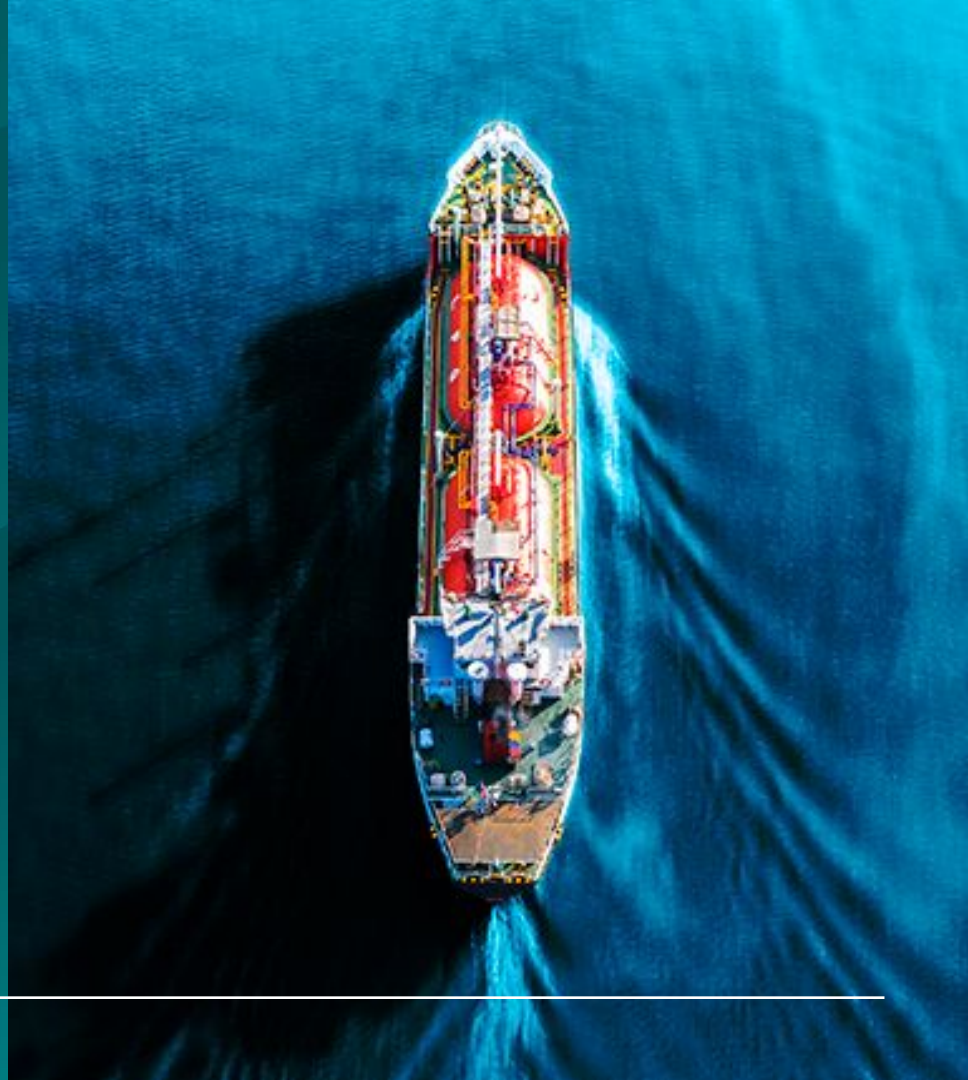
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# Leveraging NDCs to transition away from fossil fuels and protect biodiversity

