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CONFERENCE & EXHIBITION

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Mapping of the importance of gas for the development of the transitional energy sector

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Who are we and what we do?



Established in 2004, EPE is a government-owned entity, attached to the Brazilian Ministry of Mines and Energy (MME).



The purpose of EPE is to provide **energy information, studies and research** that support the **national energy planning**.



EPE's expertise areas cover electricity, **oil, natural gas**, coal, nuclear, renewables and energy efficiency.



The activities carried out by EPE include (Law 10.847/2004):

- identify and quantify the potential of **energy resources**;
- promote studies to support the **management** of the hydrocarbon reserve and production relationship in Brazil, aiming at sustainable self-sufficiency;
- promote market studies aimed at defining **scenarios of demand and supply of oil**, its derivatives and petrochemical products;
- prepare studies related to the director plan for the **development of the natural gas industry**.

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Energy in Brazil



8,510,345.540 km²

Territorial extension (IBGE, 2021)

5th largest country in the world
the largest in the Southern Hemisphere



5.570 Counties

26 States and a Federal District
5 major regions



207,750,291

Estimated Population (IBGE, 2023)

6th largest population in the world



Gross Domestic Product (GDP)

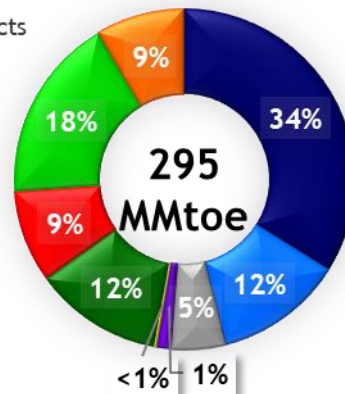
R\$ 9.9 trillion (IBGE, 2023)

11th economy in the world (World Bank, 2022)

No. 1 in Latin America

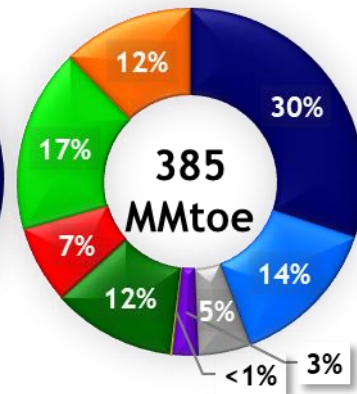
- Petroleum and Oil Products
- Natural Gas
- Coal and Coke
- Uranium - U308
- Other non-renewable
- Hydraulic and Electricity
- Firewood and Charcoal
- Sugar cane products
- Other Renewables

Mix 2021
47% renewable



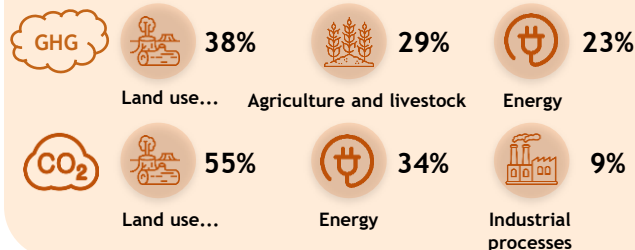
Source: EPE (2022)

Mix 2031
48% renewable



Source: EPE (2023); SIRENE (2023)

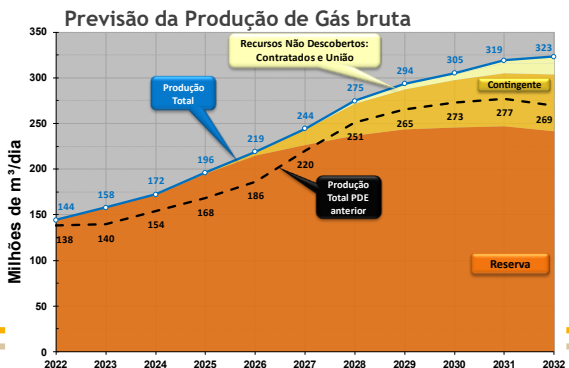
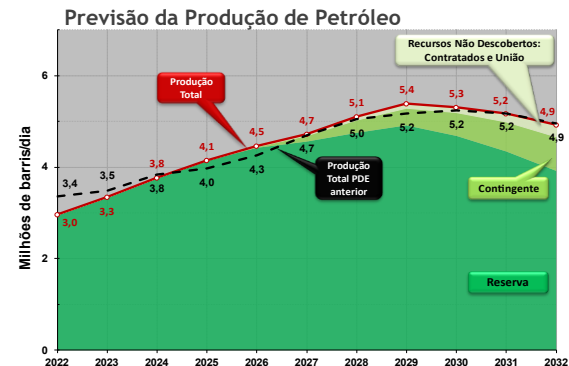
GHG and CO₂ emissions in Brazil



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Energy in Brazil

Ten Year Horizon



Natural Gas Consumption (2022)



Industrial
56,7%



Energy Sector
27%



Transportation
12,4%



Residential
2,9%



Commercial
0,9%



Public
0,1%

Relevant economic aspects of O&G production:

- ☐ Evolution of Proved Oil and Natural Gas Reserves: 29 billion barrels and 2 trillion m³ as of 2030.
- ☐ Investments in E&P Activities and Oil Surplus: injection of US\$440 - 489 billion (2023-2032).
- ☐ Oil surplus in Brazil: expectation of 3 MM barrels/day in 2029.

Source: EPE (2023)

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O&G in the transition

An Adaptation Agenda!



ENERGY

25/07/21

Carbon-Neutral LNG: Another Reason Why Natural Gas Could Win 'The Energy Transition'

Jude Clemente Contributor

I cover oil, gas, power, LNG markets, linking to human development.

<https://www.forbes.com/sites/judeclemente/2021/07/25/carbon-neutral-lng-another-reason-why-natural-gas-could-win-the-energy-transition/?sh=44b40342ff>



OIL AND GAS

08/10/21

Natural gas prices are skyrocketing around the world. Here's why the U.S. may not suffer as much

PUBLISHED FRI, OCT 8 2021 2:06 PM EDT | UPDATED FRI, OCT 8 2021 3:02 PM EDT



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<https://www.cnbc.com/2021/10/08/natural-gas-prices-are-skyrocketing-globally-what-it-means-for-the-us.html>

S&P Global

Commodity Insights

Energy transition needs involvement of oil and gas industry to cut emissions: OPEC sec gen

07/02/23

HIGHLIGHTS

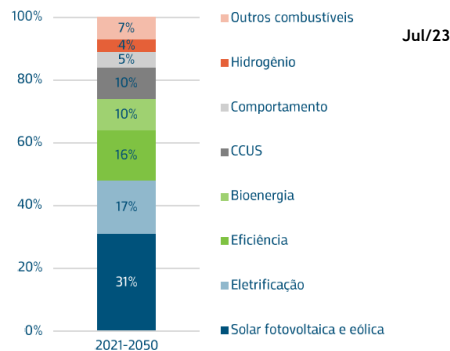
World needs more oil and gas investments: OPEC sec gen

Energy industry has a role to play in energy transition: COP28 president

World will consume 30% more energy by 2050: COP28 president

<https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/020723-energy-transition-needs-involvement-of-oil-and-gas-industry-to-cut-emissions-opec-sec-gen>

Reduções cumulativas globais de emissões de CO2 do setor de energia por pilar de descarbonização (2021-2050)



Fonte: AIE, 2023.

<https://www.ibp.org.br/personalizado/uploads/2023/06/ccus.pdf>

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Natural Gas in Brazil

Great possibilities...



03/02/22

Produção de gás natural no Brasil em 2021 atinge recorde após alta de 5%

Boletim da ANP aponta que produção de petróleo caiu 1,18% no mesmo ano

<https://www.cnnbrasil.com.br/business/producao-de-gas-natural-no-brasil-em-2021-atinge-recorde-apos-alta-de-5/>



08/07/22

ORIGEM ENERGIA PREVÊ FATURAR MAIS DE R\$ 1 BILHÃO EM 2022, IMPULSIONADA PELO GÁS DO POLO ALAGOAS

<https://petronoticias.com.br/origem-energia-preve-faturar-mais-de-r-1-bilhao-em-2022-impulsionada-pelo-gas-do-polo-alagoas/>

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NEWSLETTERS EPBR - POLÍTICA ENERGÉTICA - MERCADO DE GÁS

17/05/23

Gás para Empregar é oficialmente criado

Resolução do CNPE cria grupo de trabalho do Gás para Empregar; confirma prioridade para química e fertilizantes

<https://epbr.com.br/gas-para-empregar-e-oficialmente-criado/>

epbr

NEWSLETTER - POLÍTICA ENERGÉTICA - MERCADO DE GÁS

07/07/22

RJ vê indústria de óleo e gás como vantagem competitiva para hidrogênio e eólicas offshore

Governo estadual aguarda regulamentação federal antes de definir sua própria regulação para H2V e eólicas offshore

<https://epbr.com.br/rj-ve-industria-de-oleo-e-gas-como-vantagem-competitiva-para-hidrogenio-e-eolicas-offshore/>

epbr

18/01/22

bp estuda implantar hub de gás natural em Pecém

Hub de gás com capacidade instalada prevista de cerca de 2,2 GW pode gerar até 5 mil empregos durante sua construção

epbr — 18 de janeiro de 2022 - Atualizado em 7 de março de 2022

<https://epbr.com.br/bp-estuda-implantar-hub-de-gas-natural-em-pecem/>

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Natural Gas in Brazil

And advantages...

Valor | Empresas

06/06/23

Petrobras responde por 25% do total de carbono injetado pela indústria global em 2022, diz estudo

<https://valor.globo.com/empresas/noticia/2023/02/23/petrobras-responde-por-25percent-do-total-de-carbono-injetado-pela-industria-global-em-2022-diz-estudo.ghtml>

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NEWSLETTERS EPBR ▾

POLÍTICA ENERGÉTICA

MERCADO DE GÁS

16/05/23

Captura de carbono pode render até US\$ 20 bi às empresas brasileiras, aponta estudo

CCS Brasil defende que país avance com discussões regulatórias para tornar projetos elegíveis ao mercado de carbono

<https://epbr.com.br/captura-de-carbono-pode-render-ate-us-20-bi-as-empresas-brasileiras-aponta-estudo/>

NATURAL GAS & CCUS

Benefits of the sector



Capture technology: part of the process.



Storage sites: proximity.



Transportation cost: lower.



Infrastructure: material efficiency.



Use of manpower.

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Natural Gas in Brazil

But challenges too!

Buscar

Valor TAG

06/06/23

Brasil necessita de investimentos em infraestrutura para potencializar mercado de gás natural

País tem reservas para explorar e monetizar, possibilitando a geração de emprego e renda na cadeia de valor do gás natural que é ator importante na transição energética

<https://valor.globo.com/conteudo-de-marca/tag/noticia/2023/06/06/brasil-necessita-de-investimentos-em-infraestrutura-para-potencializar-mercado-de-gas-natural.ghtml>

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NEWSLETTERS EPBR - POLÍTICA ENERGÉTICA - MERCADO DE GÁS

19/05/23

Justiça suspende licenças ambientais do campo de Azulão, da Eneva

Ação questiona competência do Ipaam no licenciamento do projeto

<https://epbr.com.br/justica-suspende-licencas-ambientais-do-campo-de-azulao-da-eneva/>

≡



ASSISTA AGORA
AO VIVO

10/10/21

Lenha já é mais usada que o gás nas cozinhas brasileiras

Petrobras já reajustou o preço do botijão em 47,53% em 2021; desde o início de 2020, a alta acumulada é de 81,5%

<https://www.cnnbrasil.com.br/business/brasileiro-ja-usa-mais-lenha-do-que-gas-na-cozinha/>

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NEWSLETTERS EPBR - POLÍTICA ENERGÉTICA - MERCADO DE GÁS

14/03/23

Consumo de energia retrata desigualdade no Brasil

Estudo da EPE mostra que classes altas usam seis vezes mais energia elétrica que pobres. Diferença cresceu a partir de 2015

<https://epbr.com.br/consumo-de-energia-retrata-desigualdade-no-brasil/>

epbr

NEWSLETTER - POLÍTICA ENERGÉTICA - MERCADO DE

Projetos de GNL de pequena escala e a necessidade de aprimoramento regulatório

08/06/22

Os projetos de distribuição de gás natural liquefeito (GNL) em pequena escala ganham cada vez mais espaço no Brasil e no mundo. Artigo por Felipe Boechem, André Lemos, Pedro Vargas e Stephani Oliveira.

Felipe Boechem — 8 de junho de 2022 Em Colunas e opinião, Mercado de gás

<https://epbr.com.br/promissor-gnl-de-pequena-escala-necessidade-de-aprimoramento-regulatorio/>

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Knowing, Planning, and Acting

Guiding to the best choices!



- ☐ Analysis of Brazilian sedimentary basins accompanied by a georeferenced database.



- ☐ Geographical representation of the relative importance of areas for the economic development of the oil & gas sector.
 - ✓ Goal: tool for planning.



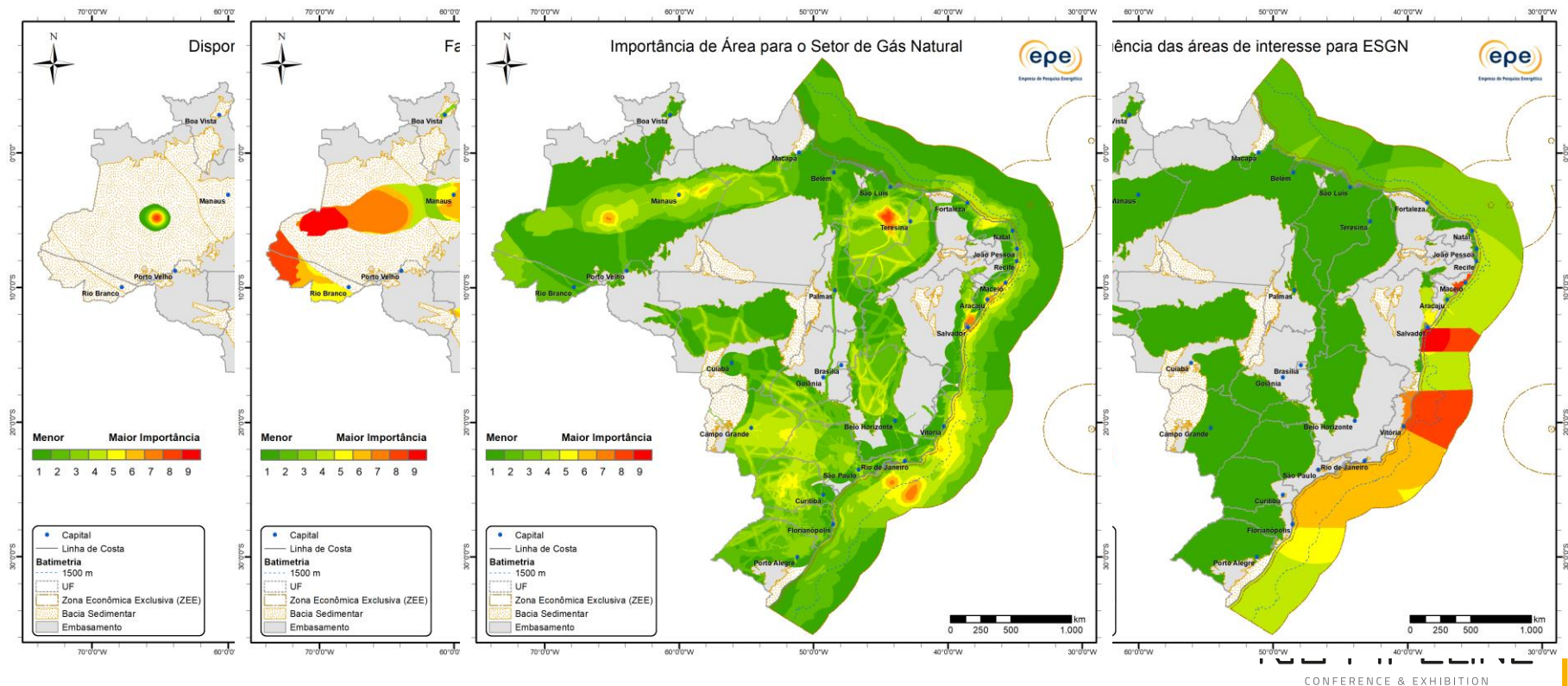
- ☐ 100% by the EPE team.



- ☐ Published (free!) every 2 years.

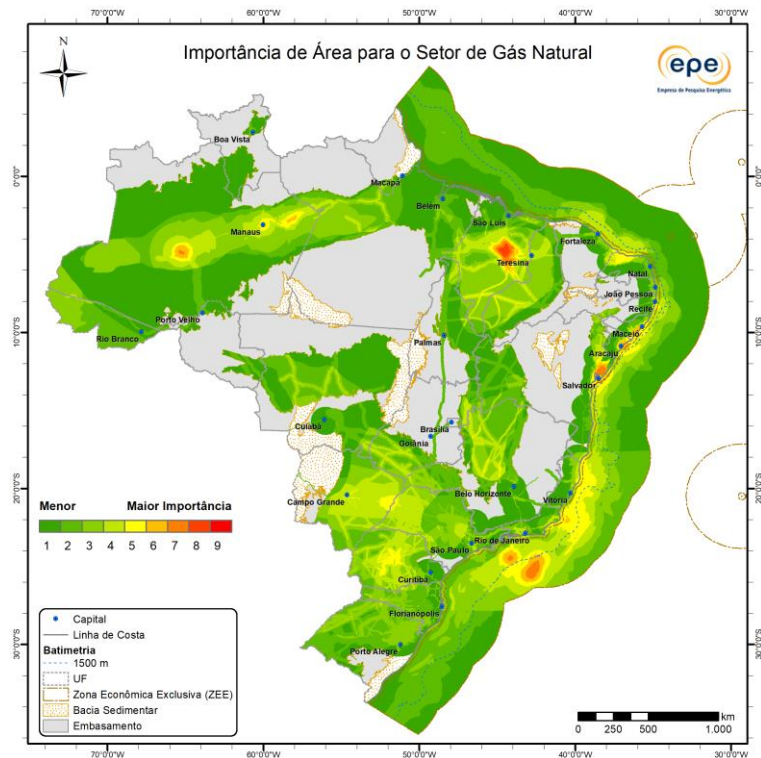
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Information of Interest



Importance of Area for the Sector

Final map



Important Remarks



- ❑ Energy planning support tool (public and private)!
 - Stability and security concomitant with the expansion of renewable sources;
 - Income;
 - Technological advances.



- ❑ Offer: Expansion at a competitive price!
 - Reduced levels of GHG emissions (pre-salt)!
 - Blue hydrogen production.



- ❑ Demand: nationwide!
 - Domestic and foreign markets!



- ❑ Infrastructure: network expansion + investments!
 - Hubs with alternatives (Electrification, CCUS, Hydrogen, Bioenergy, etc.)



- ❑ Sustainability: integrated vision, dialogue and responsibility.
 - Way for the carbon footprint reduction.