

OTC BRASIL 2023

An event organized by IBP and OTC

ANP
25 Years Developing an R&D Ecosystem in Brazil



24–26 October 2023

EXPO MAG, Rio de Janeiro, Brazil
otcbrasil.org



R&D AND TECHNOLOGICAL INNOVATION - ANP's ROLE

LAW - 9478/1997

- implement the **national energy public policies** → **promote national development.**
- foster R&D and new technologies **across industry (beyond E&P);**
- enforce **good practices** for the **conservation and use** of oil, NG and fuels and **environmental protection.**

FEDERAL CONSTITUTION

- Fundamental objectives: **reduce regional inequalities.**



R&D Investment – E&P Contracts



Investimento em P&D Obrigação Total por Regime de Contrato

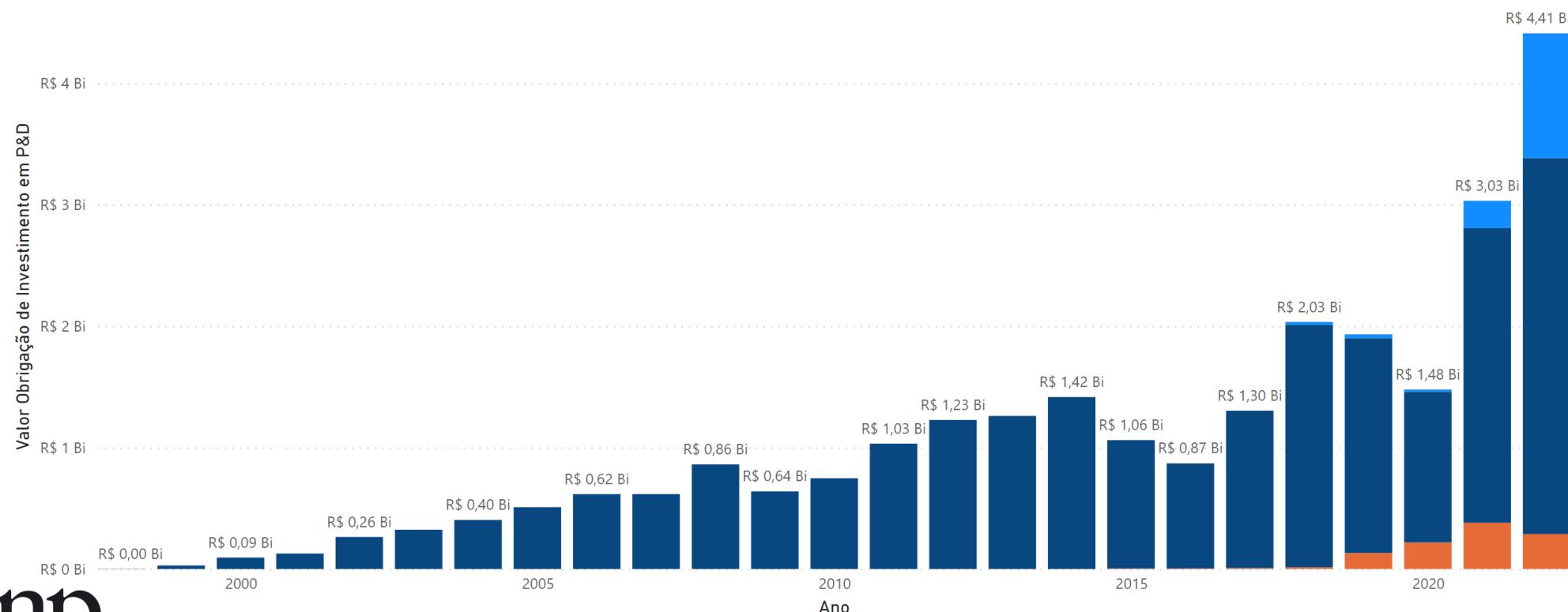


Obrigação Total

Comparativo Petrobras x Demais Empresas

Obrigação de Investimento em P&D por ano

Regime do Contrato ● Cessão Onerosa ● Concessão ● Partilha





Investimento em P&D Obrigação Total - Comparativo Petrobras x Demais Empresas

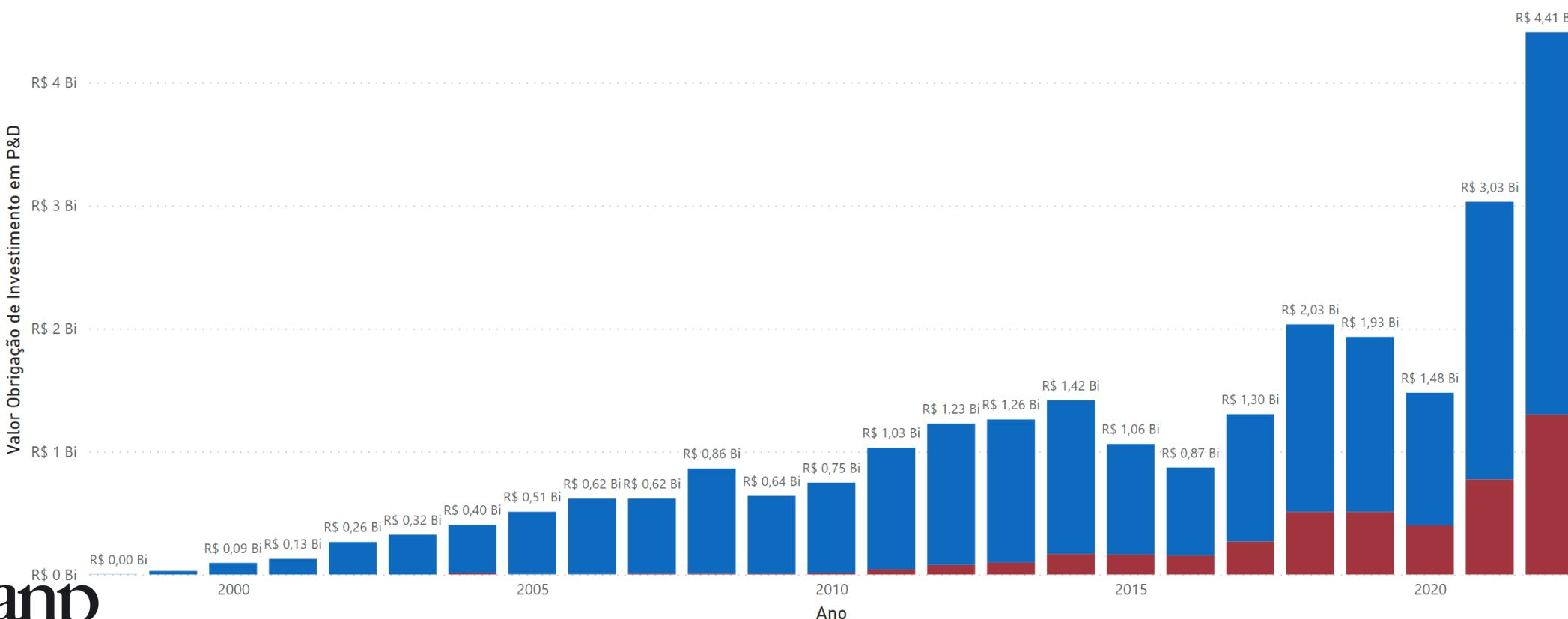


Obrigação de Investimento em P&D por ano

Petrobras x Demais ● Demais empresas ● Petrobras

Obrigação Total

Obrigação por Regime de Contrato





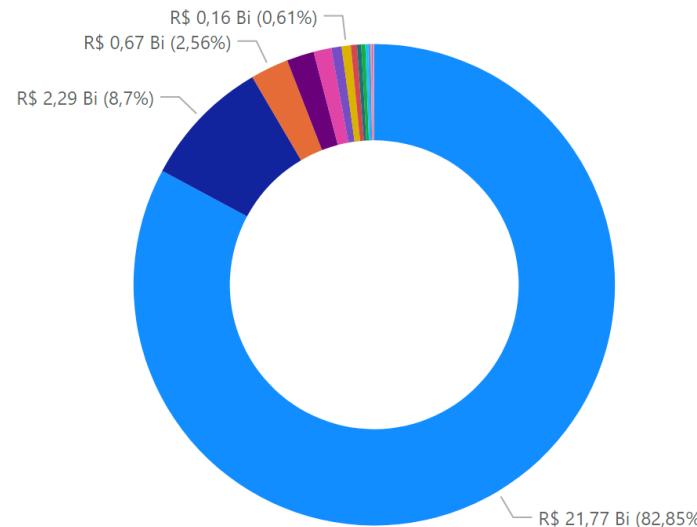
98 - 22

Investimento em P&D Obrigação de Investimento por Empresa



Petrolífera (Grupo Econômico)	Petrobras x Demais	Regime de Contrato	Contrato (Apelido)
Todos	Todos	Todos	Todos

Obrigação de Investimento em P&D por Petrolífera



83%

- Petrolífera**
- Petrobras
 - Shell
 - Petrogal
 - Repsol Sinopec
 - Equinor
 - Total Energies
 - Petronas
 - Sinochem
 - CNOOC Petroleum
 - CNODC Brasil
 - PetroRio
 - Enauta
 - Eneva
 - Qatar Energy
 - GeoPark

Petrolífera	Obrigação de Investimento
⊕ CNODC Brasil	R\$ 72.074.552,41
⊕ CNOOC Petroleum	R\$ 74.823.145,76
⊕ Enauta	R\$ 42.748.909,10
⊕ Eneva	R\$ 20.541.973,60
⊕ Equinor	R\$ 314.155.605,40
⊕ GeoPark	R\$ 9.499.757,42
⊕ Karoon Brasil	R\$ 9.129.045,76
⊕ ONGC Campos	R\$ 4.951.848,10
⊕ Petrobras	R\$ 21.772.792.815,64
⊕ Petrogal	R\$ 673.581.089,01
⊕ Petronas	R\$ 161.268.723,99
⊕ PetroRio	R\$ 48.926.478,78
⊕ Qatar Energy	R\$ 20.304.913,60
⊕ Repsol Sinopec	R\$ 481.146.478,17
⊕ Shell	R\$ 2.286.113.517,13
⊕ Sinochem	R\$ 106.523.013,81
⊕ Total Energies	R\$ 181.458.832,20
Total	R\$ 26.280.040.699,88





2022

Investimento em P&D Obrigação de Investimento por Empresa



Petrolífera (Grupo Econômico)

Todos

Petrobras x Demais

Todos

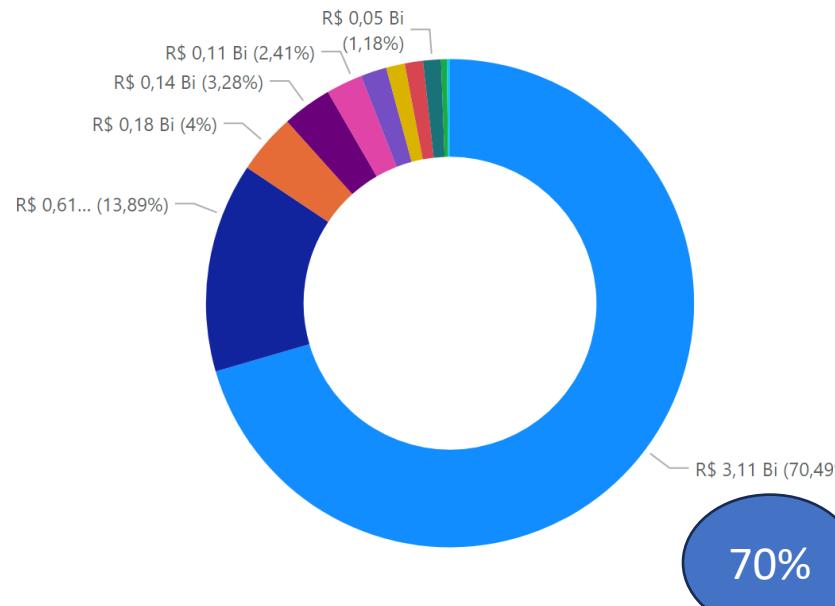
Regime de Contrato

Todos

Contrato (Apelido)

Todos

Obrigação de Investimento em P&D por Petrolífera



Petrolífera

- Petrobras
- Shell
- Petrogal
- Total Energies
- Repsol Sinopec
- Petronas
- CNOOC Petroleum
- Equinor
- CNOOC Brasil
- Qatar Energy
- Karoon Brasil

Petrolífera Obrigação de Investimento

Petrolífera	Obrigação de Investimento
<input type="checkbox"/> CNODC Brasil	R\$ 52.047.155,22
<input type="checkbox"/> CNOOC Petroleum	R\$ 54.795.748,57
<input type="checkbox"/> Equinor	R\$ 53.060.253,94
<input type="checkbox"/> Karoon Brasil	R\$ 9.129.045,76
<input type="checkbox"/> Petrobras	R\$ 3.107.567.050,27
<input type="checkbox"/> Petrogal	R\$ 176.155.137,10
<input type="checkbox"/> Petronas	R\$ 75.693.553,80
<input type="checkbox"/> Qatar Energy	R\$ 16.835.791,87
<input type="checkbox"/> Repsol Sinopec	R\$ 106.181.781,33
<input type="checkbox"/> Shell	R\$ 612.151.423,44
<input type="checkbox"/> Total Energies	R\$ 144.781.171,74
Total	R\$ 4.408.398.113,04

70%

538 PROJECTS





Painel Dinâmico de Credenciamento de Instituições Mapa de Instituições e Unidade de Pesquisa



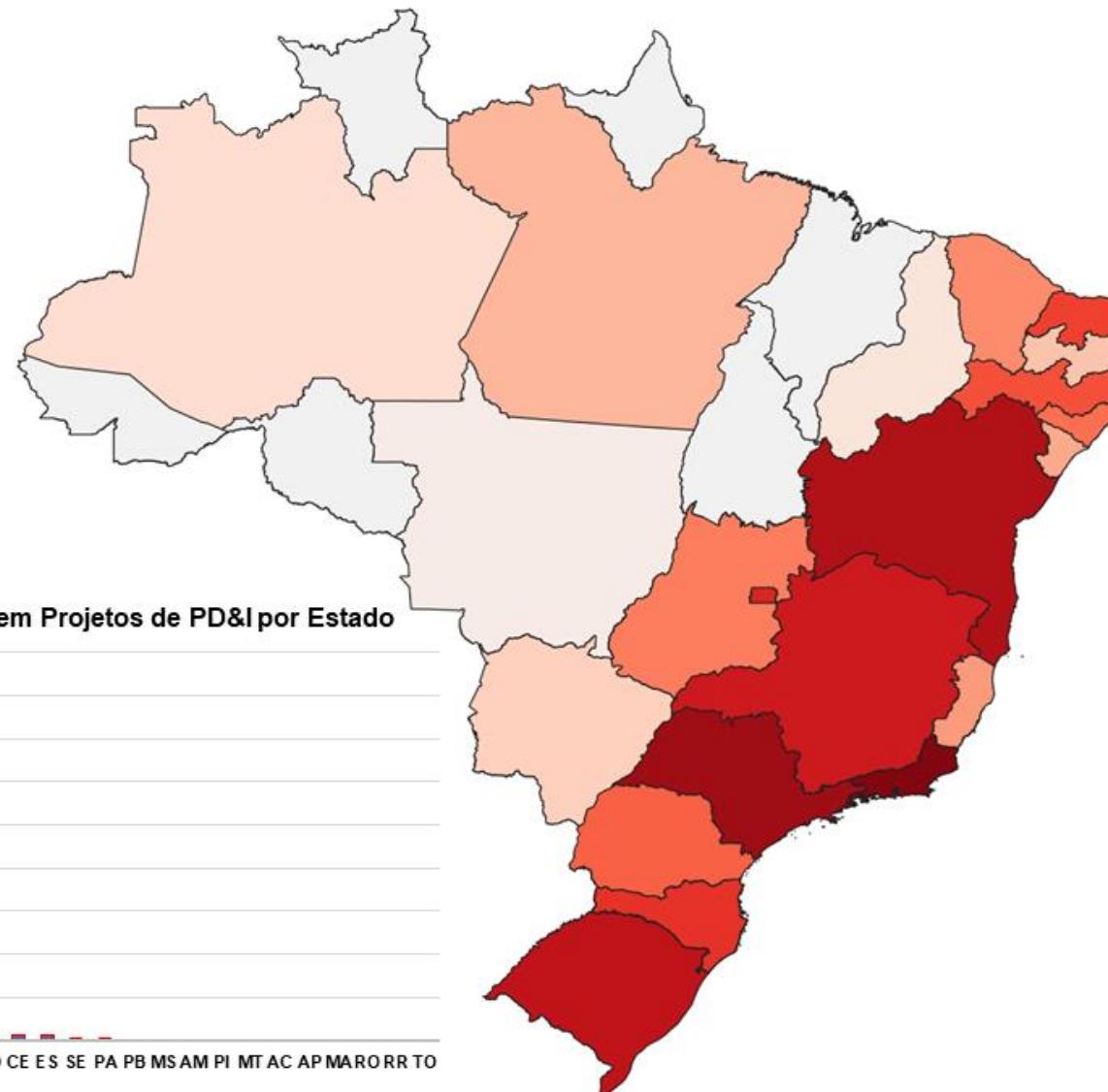
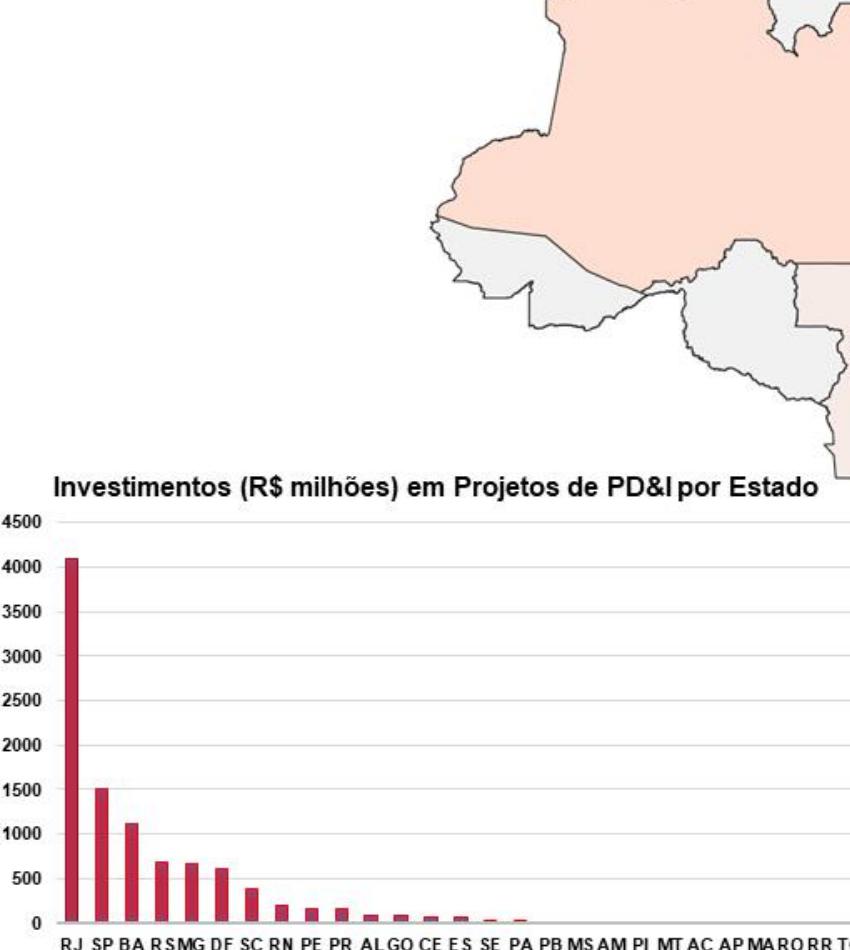
2022

1034 research units

186 institutions

Last 5 years: 90 institutions with projects.





Federal Constitution –
Fundamental Objectives:

Reduce Regional
Inequalities?

National Energy Policies –
objectives:

NATIONAL development?



Painel Dinâmico de Projetos Iniciados - Regulamento Técnico ANP nº 3/2015 Financiadores e Executores



Ano
Todos

UF
Todos

Tipo de Projeto
Todos

Empresa financiadora
Todos

Área
Todos

R\$ 14.540.259.064,93

Valor dos projetos iniciados

3264

Qtd.Projeto

Por projeto

Tema
Todos

Subtema
Todos

Executor - Empresa

PETROBRAS	R\$ 3.635.781.191,45
HALLIBURTON	R\$ 253.481.173,07
SCHLUMBERG...	R\$ 148.730.332,27
HYTRON - IND...	R\$ 127.244.055,10
FMC TECHNO...	R\$ 115.250.429,46
STROHM BRA...	R\$ 98.542.599,00
ALIS SOLUCOE...	R\$ 94.221.922,70
ENGINEERING ...	R\$ 88.045.592,45
CAMERAN DO...	R\$ 83.211.471,48
MARINE PROD...	R\$ 76.300.274,77
SIMEROS PRO...	R\$ 73.057.178,84
REPSOL SINOP...	R\$ 66.117.630,95
SHELL BRASIL	R\$ 57.737.858,02
SAIPEM DO BR...	R\$ 40.107.969,91
13ROBOTICS R...	R\$ 36.355.982,89
GE CENTRO B...	R\$ 31.688.900,83
SBM OFFSHO...	R\$ 29.706.351,39
GEOWELLEX D...	R\$ 28.720.397,73

R\$ 0 Bi R\$ 2 Bi R\$ 4 Bi
Valor dos projetos iniciados

Executor - Instituição credenciada

UFRJ	R\$ 1.833.152.737,43
PUC-RIO	R\$ 1.090.319.338,24
SENAI-BA	R\$ 638.433.388,53
USP	R\$ 543.216.819,47
UNICAMP	R\$ 526.765.138,42
SECIRM	R\$ 403.793.048,61
UNIFEI	R\$ 378.191.821,35
UFRGS	R\$ 249.699.248,24
UFF	R\$ 239.439.131,33
UFSC	R\$ 168.396.191,73
UFRN	R\$ 159.780.769,67
PUC-RS	R\$ 153.997.260,47
SENAI-SC	R\$ 128.238.480,15
UFU	R\$ 113.102.536,24
LNCC	R\$ 106.681.262,81
UNISINOS	R\$ 97.444.775,08
UTFPR	R\$ 94.328.704,36
IPT	R\$ 92.795.000,20

R\$ 0 Bi R\$ 1 Bi R\$ 2 Bi
Valor dos projetos iniciados

Empresa financiadora

PETROBRAS	R\$ 9.483.510.191,86
SHELL BRASIL	R\$ 2.859.664.422,45
PETROGAL BR...	R\$ 522.819.144,79
REPSOL SINO...	R\$ 444.523.753,16
TOTALENERGI...	R\$ 300.046.214,20
BG BRASIL	R\$ 243.683.536,27
EQUINOR ENE...	R\$ 197.891.985,73
EQUINOR BRA...	R\$ 105.328.651,39
PETRONAS	R\$ 96.376.904,32
CNOOC BRASIL	R\$ 78.079.451,54
SINOCHIM PE...	R\$ 63.915.835,05
CNOOC PETR...	R\$ 59.754.154,92
EXXONMOBIL ...	R\$ 36.375.435,92
PETRÓLEO BR...	R\$ 29.037.969,88
ENAUTA ENER...	R\$ 9.368.219,30
PARNAÍBA GÁ...	R\$ 4.624.598,41
ENEVA	R\$ 3.386.775,02
GEOPARK BRA...	R\$ 1.743.828,70

R\$ 0 Bi R\$ 5 Bi R\$ 10 Bi
Valor dos projetos iniciados



ANP HUMAN RESOURCES PROGRAM

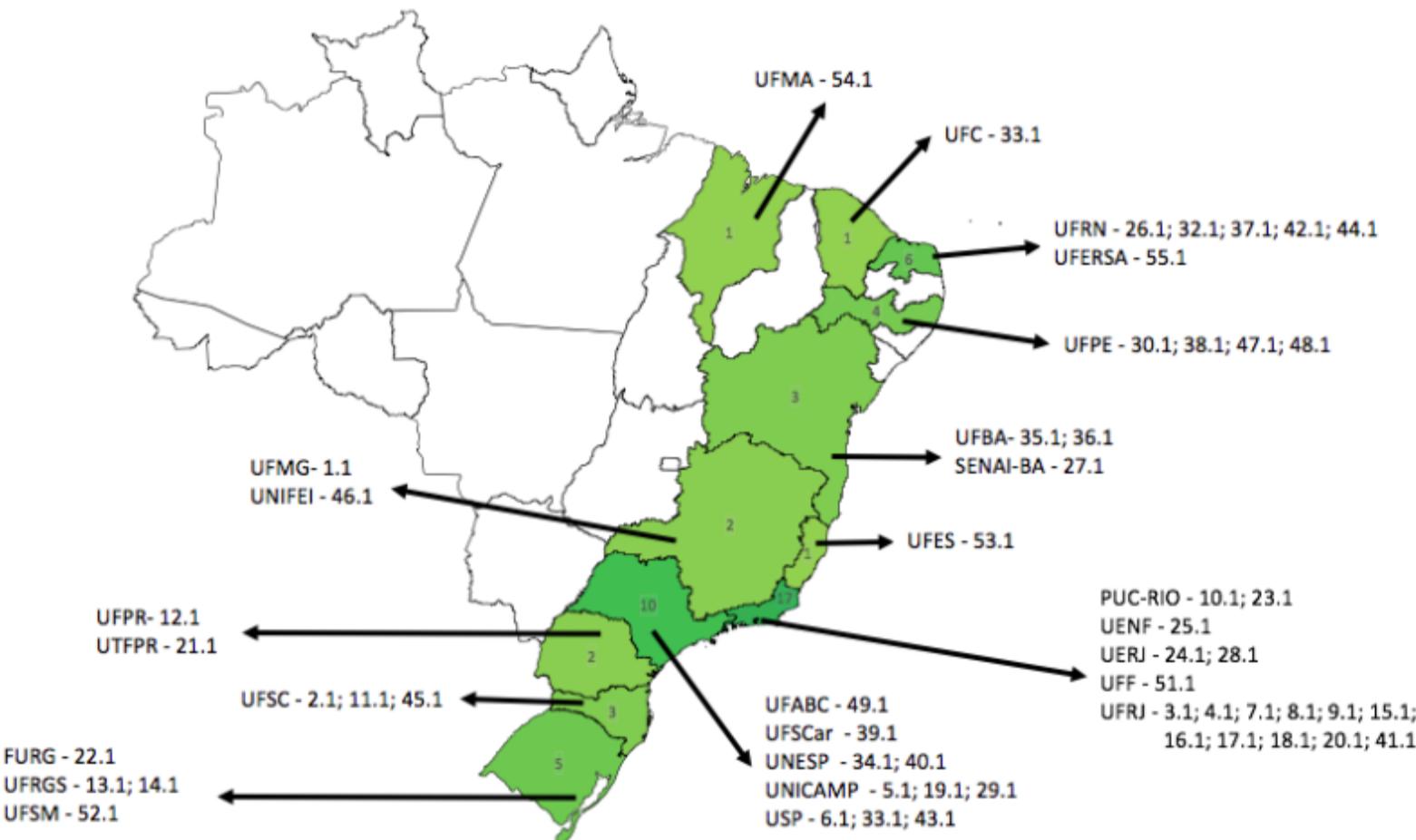


Figura 1 - Distribuição regional dos PRHs

Federal Constitution –
Fundamental Objectives:

Reduce Regional
Inequalities?

National Energy Policies –
objectives:

NATIONAL development?



Brazil as a world subsea HUB

- **25 years of investments**
 - Suppliers
 - National and International awards
 - Pré-salt: new tech
 - Tech centers





Energy Transition: actions.

01

Renewables and new fuels (h2; synthetics, biofuels)

02

Energy Efficiency

03

New Technologies - CCUS

04

R&D – critical technologies



Public Policies



Low Carbon sectors: bills coming.

Bill 576/2021
Bill 725/2022
Bill 1878/2022
Bill 2308/2023

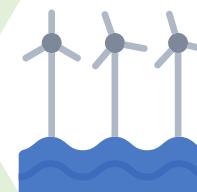
Bill 3173/2023
Bill 3452/2023



Bill 1425/2022
Bill 4196/2023
Bill 4516/2023



Bill 576/2021



R&D investments in renewables and decarbonization themes

CNPE 2/2021 repositioning required certain themes to be prioritized...



R&D Trends:

- Artificial Intelligence
- Machine Learning
- Digital Transformation
- Smart Completion
- CCUS
- Hydrogen
- Biofuels
- Environmental Protection

ANP Strategies and Plans

R&D

- Critical Technologies
- High TRLs
- Blend investments
- NATIONAL opportunities
- Techonological oversight

Renewables / Decarbonization / Energy Transition

- Clarify - eligibility

Innovation

- Entrepreneurship Program – startups

Human Resources Program

- Alignment with public policies (PNH2; Gás to Employ; CCUS...)
- Foster the technical level
- Support Exchange Programs
- Up-Country Opportunities: NG; Equatorial Margin; green economy
- 2050: Jobs - careers



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THANK YOU

Daniel Maia Vieira
Director



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